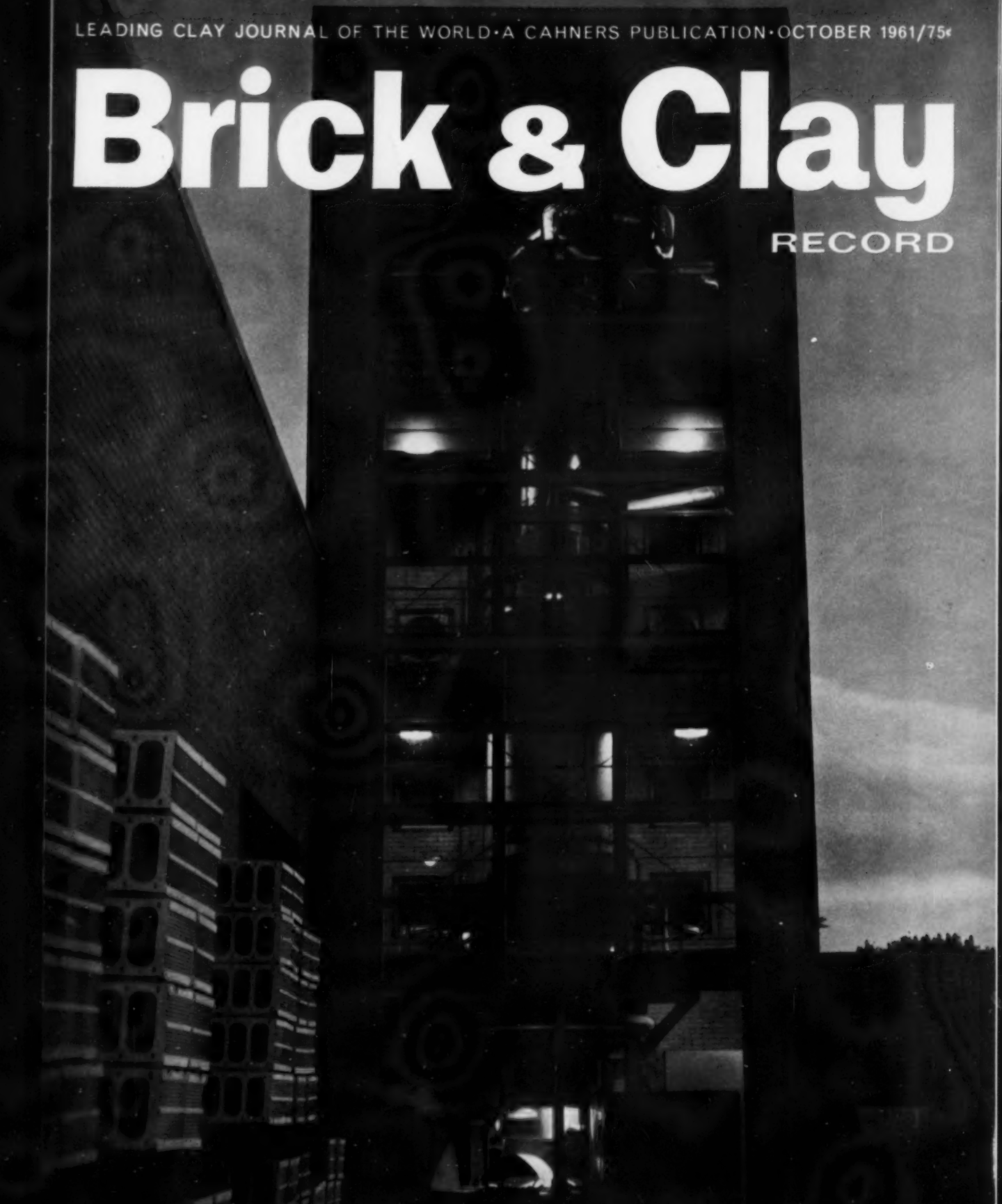
LEADING CLAY JOURNAL OF THE WORLD·A CAHNERS PUBLICATION·OCTOBER 1961/75¢

Brick & Clay RECORD

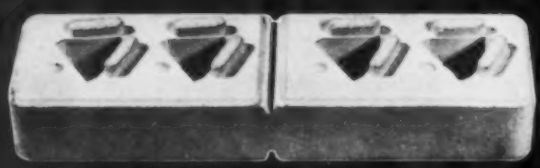


Research—key to SCPI national meeting

For Accurate Heat Measurement

CHOOSE THE

BELL PYROMETRIC SYSTEM



All raw materials, pressing and firing characteristics are continuously controlled by many daily measurements.

New, Improved CONE PLAQUES

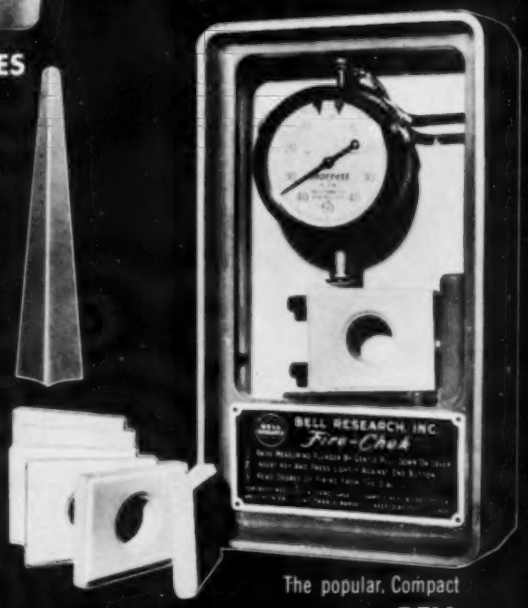
This plaque is center grooved to break squarely so it can be used as two or four hole plaques. You can now inventory one type plaque to serve a dual purpose.

PYROMETRIC CONES

The chief use of cones is to serve as a true guide to the end point of firing. They also are used for investigations of heat distribution in Kilns.

FIRE-CHEK KEYS

The simple use of these keys and gauge gives you a constant and reliable method of measuring the heat differential. These gauge readings keep you informed on poor firing areas in your Kiln.



The popular, Compact
BELL FIRE-CHEK GAUGE
A rugged and precise instrument

Send today for complete information

BELL RESEARCH, INC.

P. O. Box 757 E. Liverpool, Ohio

BELL OPERATIONS

Making Extra Dollars for Ceramic Customers—Since 1931

BELL MINERALS
Feldspar
W. Paris, Me.

BELL CLAY
Ball Clays
Gleason, Tenn.

BELL RESEARCH
Cones, Plaques & Keys

BELL KAOLIN
Kaolin
Batesburg, S. C.

SOUTHWESTERN TALC
Blon-Tex

Circle Service No. 1

we boiled down tons of paper to give you

A FACT FILE YOU CAN USE

Here's a Handy Reference File

you can use. It gives you facts and figures on all the products TAM makes. Tabulates chemical analyses, physical properties and commercial uses into a compact, legible, working form. Everyone who has seen and used it finds that it saves valuable time —

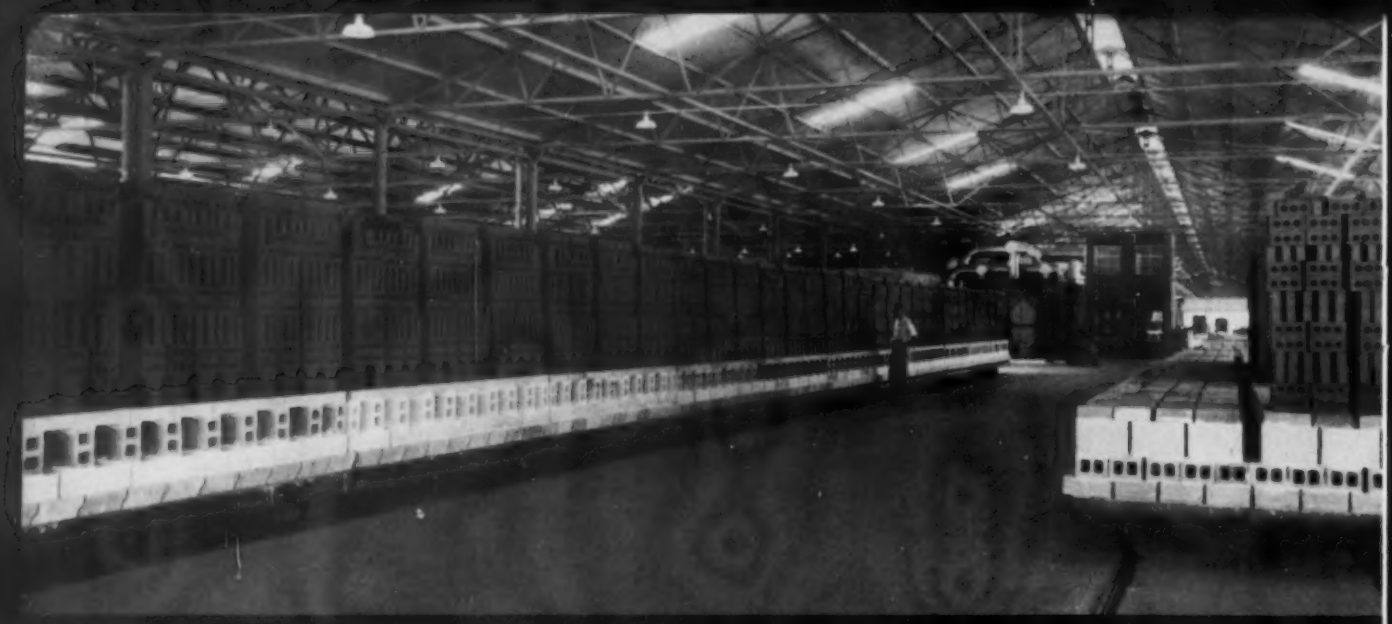
Sent Free Upon Request

Your personal copy will be sent at once. A letter, phone call, post card or word to your TAM field engineer will get prompt attention.

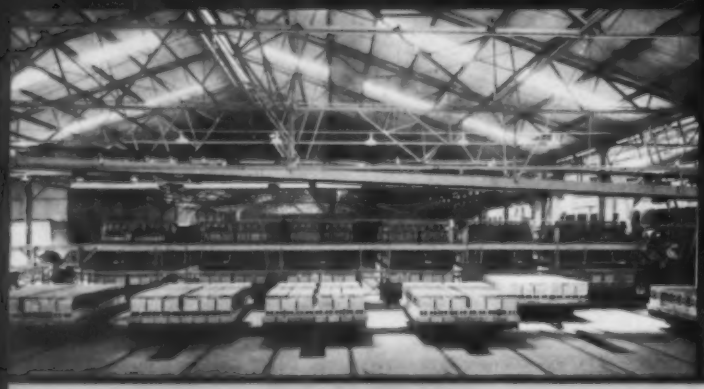
TAM
DIVISION NATIONAL LEAD COMPANY

Executive and Sales Offices: 111 Broadway, New York City
General Offices, Works and Research Laboratories: Niagara Falls, New York

Circle Service No. 2



for a fine MERRY BROTHERS product—in one of the world's most advanced brick plants



a 524 ft DRESSLER KILN and 186 ft FOUR-TRACK DRYER

Engineering Service

Swindell-Dressler Corporation provides a complete engineering service for the ceramic industry in the design and construction of new plants, and modernization of existing facilities. Consultations arranged gladly on request.

For Merry Brothers Brick & Tile Company at Augusta, Ga., one of the longest and most productive tunnel kilns in existence is producing 100,000 highest quality face brick per day—a DRESSLER Kiln, with dryer, car-handling and other facilities in the kiln building supplied by Swindell-Dressler on a turn-key contract.

In addition, Swindell-Dressler engineered the Ad-mix plant facility, including clay handling, crushing, grinding and screening.

The gas and oil burning kiln holds 51 cars, and operates at the rate of 30 cars per 40-hour cycle. The buff- and red-burning clays with various mixes present difficult oxidation and cooling problems—solved completely with the Dressler Kiln's efficient operation. • May we discuss your production requirements?

SWINDELL-DRESSLER CORPORATION

Engineers and Manufacturers

PITTSBURGH 30, PA.

The SWINDELL-DRESSLER CORPORATION of Canada, Ltd.

Ottawa, Canada

THIS MONTH'S COVER

Research is the theme of the annual meeting of the Structural Clay Products Institute in November. BRICK & CLAY RECORD salutes the Institute and its research program by devoting its cover to a scene from the Structural Clay Products Research Foundation at Geneva, Ill. Dramatically pictured is the SCPRF tower fusion furnace used to produce lightweight aggregate in sufficient quantities for use in full-scale plant production trials.

A CAHNERS PUBLICATION

Brick & Clay RECORD

Contents for October, 1961 • Vol. 139, No. 4

42 Depletion Becomes Law

President Kennedy has signed H.R. 7057, climaxing a long and hard 10-year fight by the clay products industry for the granting of a depletion allowance to the producers of various clay products.

44 Let's Take a Close Look at Our Market

In a special editorial, BRICK & CLAY RECORD editors point out the opportunities for the industry in 1962 and advise on a course of action which is designed to make the most of these opportunities.

46 Research Tops SCPI Agenda

A bright future research is on the horizon as the structural clay products industry focuses its attention on the expanding markets of the 1960's. The meeting will be in Washington November 6 to 8.

50 Tunnel Kiln Capacity Increased Through Recirculation

Marshall Brick Co. in Texas remodeled its kiln and added a dryer which increased production from 57 to 88 thousand brick per day through the kiln. Recirculation in preheat section of kiln provided the answer.

52 How Mixing Affects Properties of Ceramic Block

Another in the informative series on ceramic block by Roy Moffitt. This month's installment concerns mixing and its relation to block properties.

54 Plant-Designed Lifters Save Money

Denver Brick & Pipe Co. designed these novel units to eliminate slow, tedious labor in setting kiln cars of 4-foot pipe.

56 How Do You Mine Clay?

The story of J. M. Huber Corp.'s operations, in which both scraper and dragline methods are used.

58 A New Concept in Shipping Brick by Rail

The Pactainer system reflects growing interest by the industry in the concept of containerization.

61 Feature Lightweight Clay at Meeting

One of the highlights of the 14th Pacific Coast meeting this month will be the lightweight structural clay products symposium.

Departments

21 New Products
22 New Literature
27 Editorial
29 News of the Industry
33 SCPRF News
35 News of Refractories
67 Circle Service Card
82 Classified Ads

Leading Clay Journal of The World
Established 1892; Now in 69th Year

BRICK & CLAY RECORD is published monthly by Industrial Publications, Inc., 5 South Wabash Ave., Chicago 3, Ill. Second class postage paid at Chicago, Illinois and at additional mailing offices.

Subscriptions

U.S.A. and Canada, $5.00 for One Year; $10.00 for Three Years. Single Copies (current issue) 75 cents, foreign $1. Single copy rates for back issues, $1. Foreign Rates, $7 per year; three years, $15.

Subscription Renewals

Forward all mail, including subscription renewals, changes of address (including new zone number, old address) orders for subscriptions, undeliverable copies, etc. to BRICK & CLAY RECORD, 5 South Wabash Ave., Chicago 3, Ill. Printed in U.S.A.

Published monthly and copyrighted 1961 by Industrial Publications, Inc., subsidiary of Cahners Publishing Co., Inc., 5 S. Wabash Ave., Chicago 3, Ill., U.S.A. Norman L. Cahners, Chairman of the Board; Maurice P. Driscoll, President; F. L. Steinhoff, Exec. Vice President & Treasurer; Saul Goldweitz, Vice President; F. J. Amstadter, Secretary. BRICK AND CLAY RECORD is indexed by Engineering Index, Inc.

*J. J. SVEC
Editor and Publisher

Editorial

*FRED L. STEINHOFF, Editorial Director
KENNETH A. BRENT, Senior Editor
*NEAL MOHLER, Managing Editor
A. A. FERREIRA, Associate Editor
Ceramic Engineering Staff

Sales Offices

HOME OFFICE: *5 S. Wabash, Chicago 3, Ill. Franklin 2-6880: Floyd M. Burdick, Business Manager; J. B. Stringer, Sales Representative; Robert H. Mathews, Assistant Business Manager; Anne Anzak, Sales Assistant.*

NEW YORK: *Albert S. Robinson, Vice President; Harry H. Linden, 310 Madison Ave., New York 17, N. Y., Yukon 6-2030*

CLEVELAND: *Richard F. Burkhart, Room 702, The B. F. Keith Building, 1621 Euclid Ave., Prospect 1-1312*

SOUTHERN: *John M. Printup, 121 S. E. First St., Miami, Fla., Phone: Franklin 9-2668*

DALLAS: *R. W. "Whit" Jones, John Printup & Assoc., 906 Beechwood Drive, Richardson (Dallas) Tex., Phone: AD 5-2041*

CALIFORNIA: *Richard S. Meyer, 3137 Kelton Ave., Los Angeles 34*

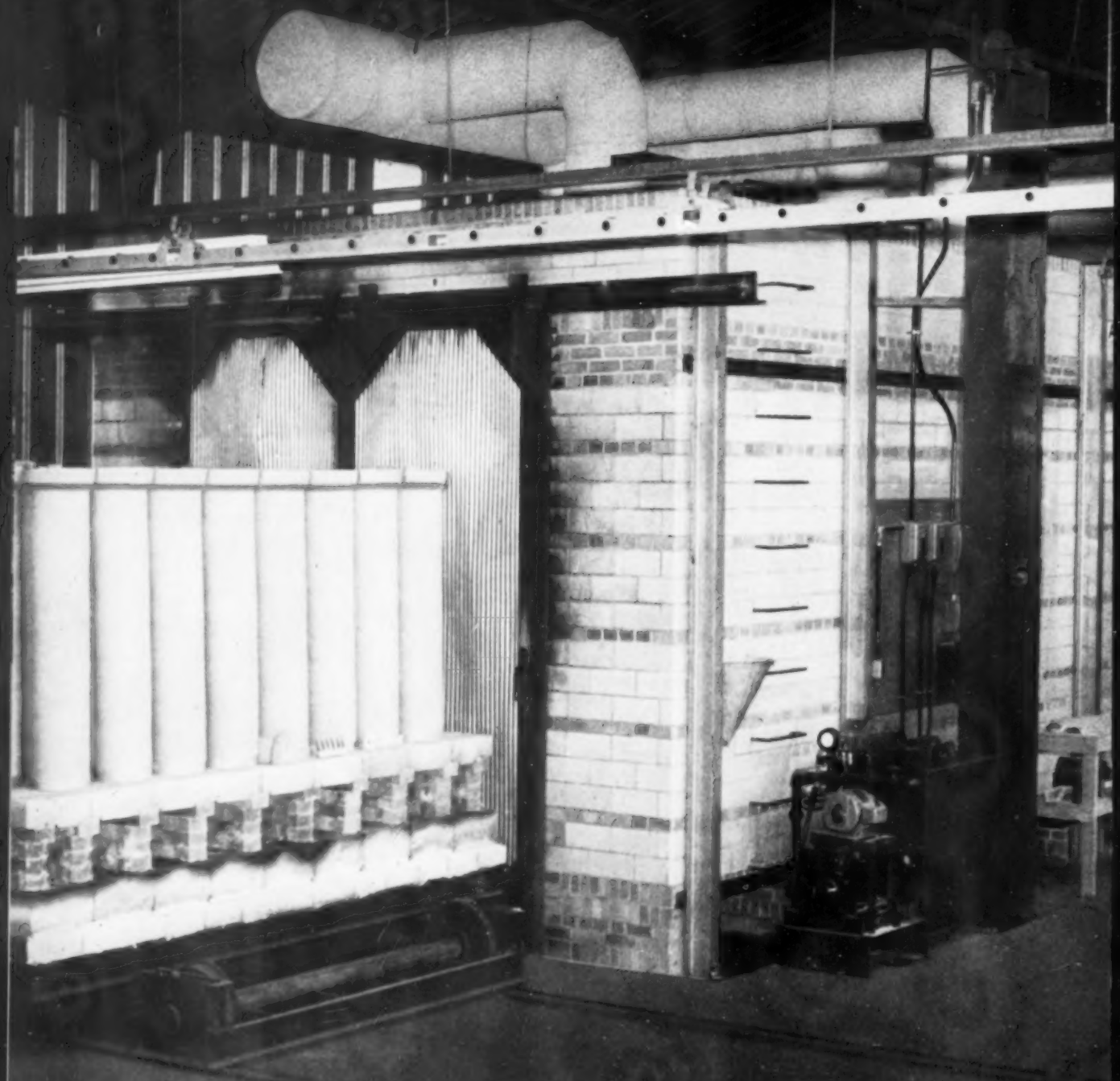
PACIFIC NORTHWEST: *Frank J. McHugh, Jr., 520 S. W. 6th Ave., Portland 4, Oregon. Phone: CApital 6-2561. Also Seattle*

CONTRACTS: Formal acceptance made only in Chicago.

Business

M. J. SKODON, *Vice President in Charge of Manufacturing*
H. G. LOVE, *Circulation Director*

ENGINEERING makes the difference...
IN PRODUCTION OF CLAY PIPE



ALLIED

FERRO

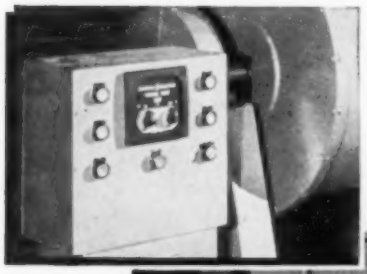
Designers and builders of high-output, cost-reducing, production facilities for the Ceramic Industries.

Allied Engineering Div., FERRO Corporation, Cleveland 5, Ohio

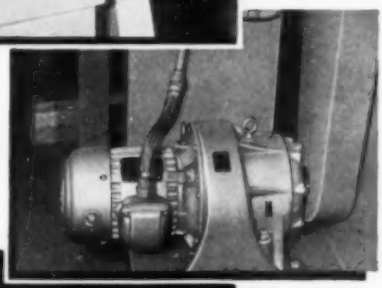
Fig. 664 Ball Mill with combination grinding and discharge door, gear guard and special optional controls.

Custom-fitted to meet your needs

"U.S." BALL MILLS



OPTIONAL CONTROLS



CHOICE OF DRIVES

"QUICK-OPENING" DOORS

ENCLOSURES

Whether your requirements are for laboratory batches as small as 12 gals., or high production quantities up to 4,000 gals. per batch, Ball Mills from the "U.S." line can meet them—and *each* Mill can be "custom-fitted" with optional controls, drives, accessories and "specials" as needed to make your grinding operations cleaner, safer, faster, more accurate and *less* expensive. The few optionals listed below merely indicate the wide range of choices available when you buy "U.S." Ball Mills:

CONTROLS—Typical only are magnetic brakes, inch and jog as well as "rocking" devices, reduced-voltage starters, revolution counters, timers, temperature and pressure controls.

DRIVES—Standard constant and variable speed drives in suitable combinations with V-belt, chain, pulley, gear box, gear motor or torque-arm. Motors open, explosion-proof, or totally enclosed. *Special* drive arrangements provided.

DOORS—Interchangeable "quick-release" types include hinged combination grinding and discharge doors, grinding, wet discharge and dry discharge doors.

ENCLOSURES — MOUNTS—Dustless housings, guards, screens, automatic "shut-off" gates. Pier and pedestal mountings, standard, or specially designed to meet almost any operating condition.

Discuss your needs with our engineers . . . more than any other manufacturer, U.S. Stoneware has specialized in getting the highest performance, lowest operating cost and longest service life out of ball mills by providing controls and accessories to "custom-fit" the unit to individual plant or laboratory requirements. Get in touch with us. We'll be happy to work with you.

496-G

PROCESS EQUIPMENT DIVISION

U. S. STONEWARE
AKRON 9, OHIO

"U.S." BALL MILL BROCHURE BM-290 SENT ON REQUEST

Circle Service No. 5

← Circle Service No. 4

OHIO KILNS will do the best job for you . . .

ANOTHER OHIO KILNS INSTALLATION!

Twin Kiln Installation at Rockford Brick and Tile Co.

Ohio Tunnel Kilns are made for all types of ware, and the largest and smallest-sized production. As such, they are ideally suited for **your** plant—no matter what its size or capacity.

With Ohio Tunnel Kilns you get the most UNIFORM BURNING, the most even colors, with the least possible loss.

They cost less to install in your plant, because they are produced in volume and at minimum cost. All the materials are fabricated in our large plant, shipped to your site, and erected there by our own professional crews.

Ohio Tunnel Kilns fit your pocket-book as well as your operation. All of Ohio Kilns' exclusive features are yours at no extra cost!

NOW AVAILABLE!

The fully automatic OHIO CONTROL SYSTEM is now available for programmed control of periodic kilns. It performs equally as well as on our tunnel kilns. Present installations include round down-draft, shuttle, laboratory, and other periodics suited to programmed firing. The system is fully automatic and controls the firing from the initial light-up through peak temperature and turn down. It will faithfully follow any firing curve.

The OHIO CONTROL SYSTEM is completely assembled in our shops and shipped to you ready to place in operation. **Write for prices!**

OHIO KILNS
GRANVILLE, OHIO • JU 2-2571

Circle Service No. 6

NEWS from Dow Corning

How this brick was sold

STORY OLDSMOBILE, INC., LANSING, MICH. · FREEMAN AND SMITH, AIA-ARCHITECTS

Silaneal® meets specifications for controlled suction rate

The plans for this modern glass-and-brick auto showroom specified an attractive high suction rate, sand mold brick. In addition, the walls must be as strong and as leak-proof as possible, as well as attractive. Much depended, the architect knew, upon the way the brick performed in laying; on how well its suction rate could be controlled.

The popular method is to soak the cube of brick at the job site. But he knew a better way. He knew how to save the contractor time and money; how to eliminate the need for soaking at the site. And most important: he knew how to get a uniform, controlled suction rate on all brick surfaces where needed. To achieve these advantages, he added one more specification: the brick must be plant-treated with Silaneal brand silicones to reduce its suction rate to between 10 and 20 grams.

Why Silaneal? Lay an ordinary high suction rate brick on wet mortar and considerable water is immediately sucked out of the mortar. The mortar dries too quickly and shrinks, leaving hairline cracks at the interface of mortar and brick. Result: a poor bond, a wall that may leak. Now lay a brick treated with Silaneal on wet mortar. Silaneal treatment reduces initial water absorption of high suction brick; allows mortar to dry slowly and thoroughly. The bond is better, the wall stronger.

Wall leakage reduced. Transverse pressure tests — and tests simulating wind-driven rain — have demonstrated repeatedly that wall sections built of high suction brick treated with Silaneal show definite improvement in strength and leak resistance over similar, but untreated, brick.

Brick stays clean. Silaneal makes the brick surface water repellent so dirt washes away with rain. And when water can't get into the brick, efflorescence is also minimized. Another important point: the brick are left free to "breathe" because Silaneal treatment does not obstruct passage of air or moisture vapor.

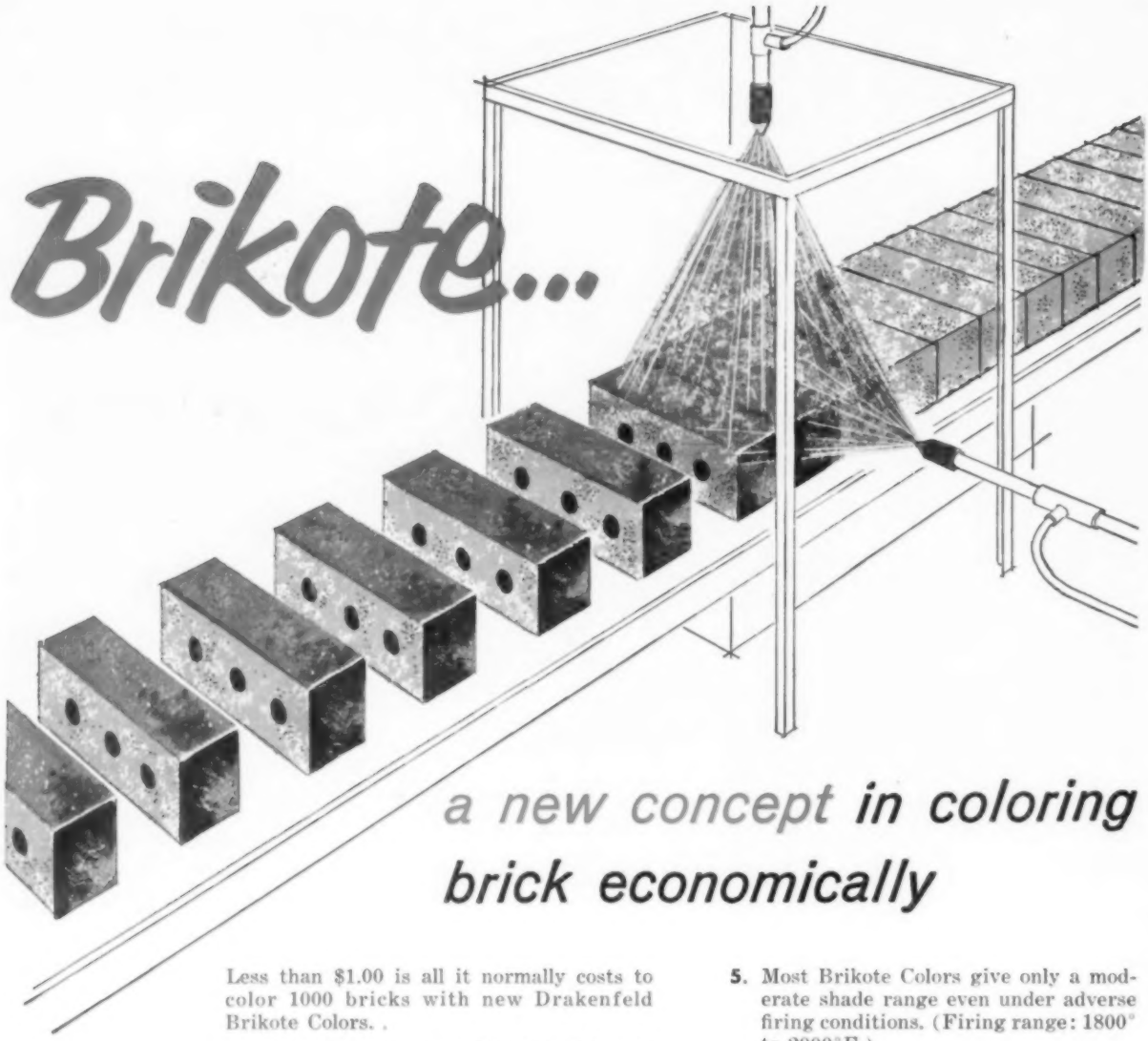
For more information on how Silaneal helps sell brick, visit the Dow Corning suite at the Shoreham Hotel during the SCPI meeting in Washington, November 6-8.

SILANEAL®
keeps brick clean

Dow Corning CORPORATION
MIDLAND, MICHIGAN

Circle Service No. 7

Brikote...



a new concept in coloring brick economically

Less than $1.00 is all it normally costs to color 1000 bricks with new Drakenfeld Brikote Colors. .

The all-around economy of Brikote Colors is due to these important characteristics:

1. Exceptional opacity and coverage.
2. A very thin coat is adequate and does not alter the brick texture.
3. The colors suspend readily in water to insure even dispersal when sprayed. They are supplied in wet form, ready to spray.
4. Coated brick may be face set and fired immediately without danger of sticking.
5. Most Brikote Colors give only a moderate shade range even under adverse firing conditions. (Firing range: 1800° to 2000°F.)
6. A blend of various colored brick can be run by simply changing the color intermittently at the spray machine. With a proper spray gun battery setup, such blending operations do not hamper production speed.

Brikote Colors in traditional brick colors are augmented by new shades in the complete line. Matches are also available for manganese flash and zinc flash. Write for complete information or ask for on-the-spot cooperation from one of our field engineers.

CALL ON Drakenfeld — *YOUR PARTNER IN SOLVING COLOR PROBLEMS*

B. F. DRAKENFELD & CO., INC.

Executive Offices: **45 Park Place, New York 7, N. Y.**

Factory and Research Center: **Washington, Pa.**

Pacific Coast Agents:

BRAUN CHEMICAL COMPANY, 1363 So. Bonnie Beach Place, LOS ANGELES 54, California, Phone ANgelus 9-9311

BRAUN-KNECHT-HEIMANN COMPANY, 1400 Sixteenth Street, SAN FRANCISCO 19, California, Phone: HEmlock 1-8800

SCPI

Circle Service No. 8

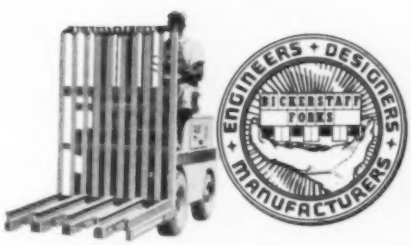
The Picture of Profitable Brick Handling . . .

No Hands - No Pallets - No Strapping

A Bickerstaff Fork* is the profitable way to handle brick. It eliminates two costly items immediately - pallets and strapping. It moves brick in and out of inventory, loads direct to truck or freight car and sets and draws kilns faster. That's why Bickerstaff is called the "do-it-all" for brick handling.

* M-M MINIMUM MAINTENANCE ON ALL FORKS

Your brick handling need can be supplied by Bickerstaff engineers. Tell us your requirements - we'll do the rest.



BICKERSTAFF
INCORPORATED
P. O. BOX 1178
COLUMBUS. GEORGIA
CYpress 8-0455

ENGINEERED
FORK LIFT TRUCK
ATTACHMENTS

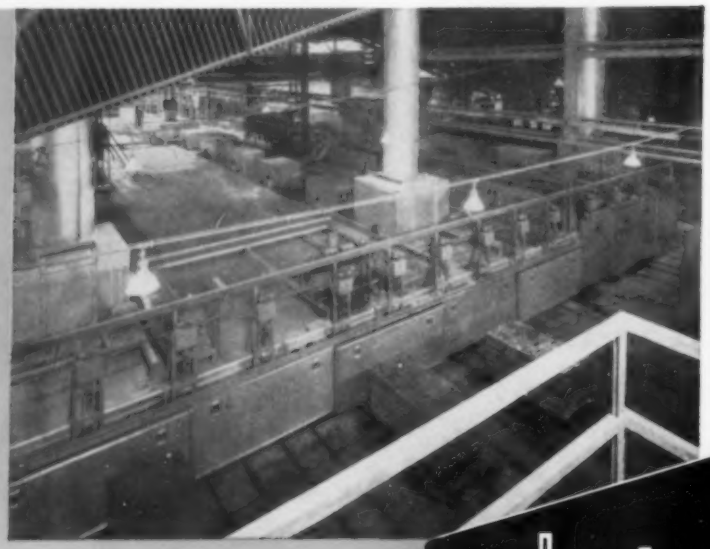
REPRESENTATIVES THROUGHOUT THE U. S. AND CANADA

West Coast Representative - WALTER C. STOLL & SONS
5028 Alhambra Avenue, Los Angeles, California

Circle Service No. 9

HARBISON-WALKER REFRACTORIES CO.

World's Most Complete Refractories Service



We have been privileged to work with this prominent organization in the planning and installing of their refractory dryers at the Baltimore, Maryland, plant.

Progress is the gratifying resultant for both organizations when user and designer blend their respective talents and initiative to help contribute *more* of *better* refractories to industry.

process basic refractory shapes at their BALTIMORE PLANT in

lanly **DRYERS**

Shown above is the entering end of the Lanly Car Deck Dryer. It is 55′ wide by 140′ long and divided into two separately heated and controlled compartments each six cars wide. To the right in the upper photo is a Lanly Rack Car Dryer measuring 20′ wide by 60′ in length. It holds a total of forty cars.

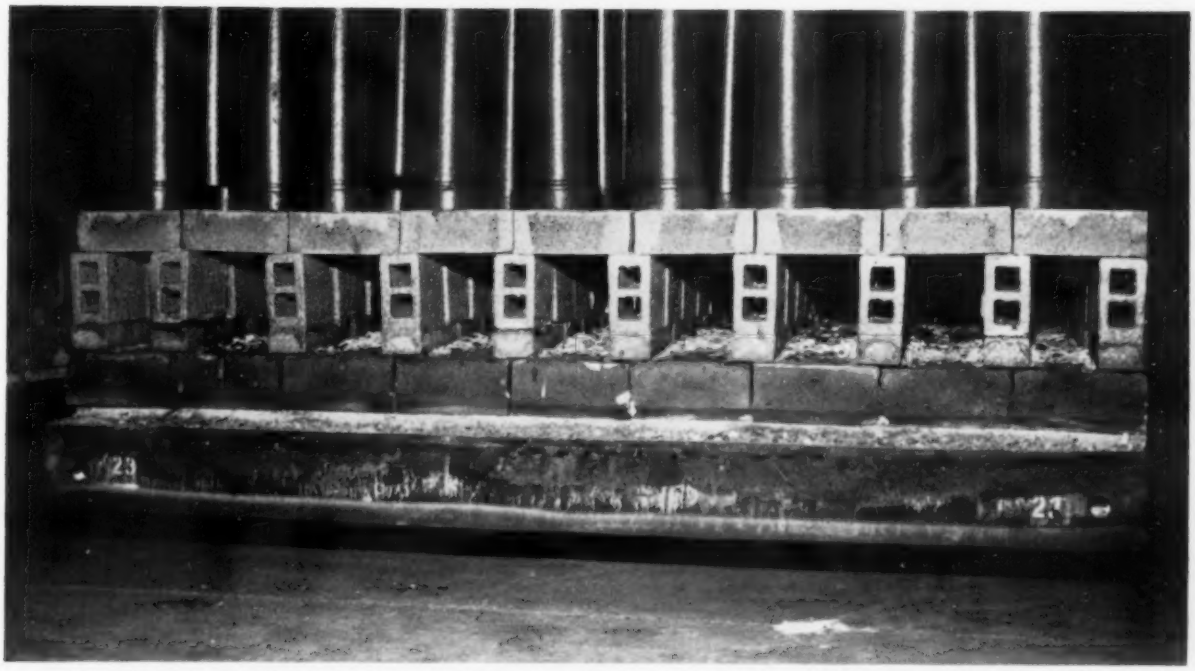
The LANLY COMPANY

2808 Euclid Avenue, Cleveland 15, Ohio

Atlanta, Georgia • Birmingham, Ala. • Boston, Mass. • Chicago, Ill. • Cleveland, Ohio
Toronto, Ontario • Columbus, Ohio • Detroit, Mich • Buffalo, N. Y.
Pittsburgh, Pa. • Rochester, N. Y. • Portland, Ore. Seattle, Wash. • St. Louis, Mo.

Circle Service No. 10

Logan converts 100% to PACO Girders!



Unretouched photo showing PACO cored tile girders after three years of continuous service. Photo courtesy of Logan Clay Products Company, Logan, Ohio.

Replacement cut 50% in 3-year continuous salt-glazing operation

Imagine . . . a 50% slash in car top replacement, lower initial cost and a reduction in inventory problems through a less complicated car top arrangement! That's what PACO has done in dozens of plants, and what it can do in your operation. Here's why.

Only PACO Car Tops are made from the mineral pyrophyllite. This makes them more durable because of a higher resistance to thermal shock and hot load deformation. Greater strength permits construction of the thin wall (1⅜" max.), large core PACO girder block shown above. The large open core allows products of combustion to freely pass through, around and between each girder and on to the entire deck surface. It eliminates "bottling up" of heat in any one area. Cooling is also more uniform and will not reheat ware in cooling zone of kiln. And, in the case of the Logan installation, PACO Car Tops had prolonged resistance to salt glazing.

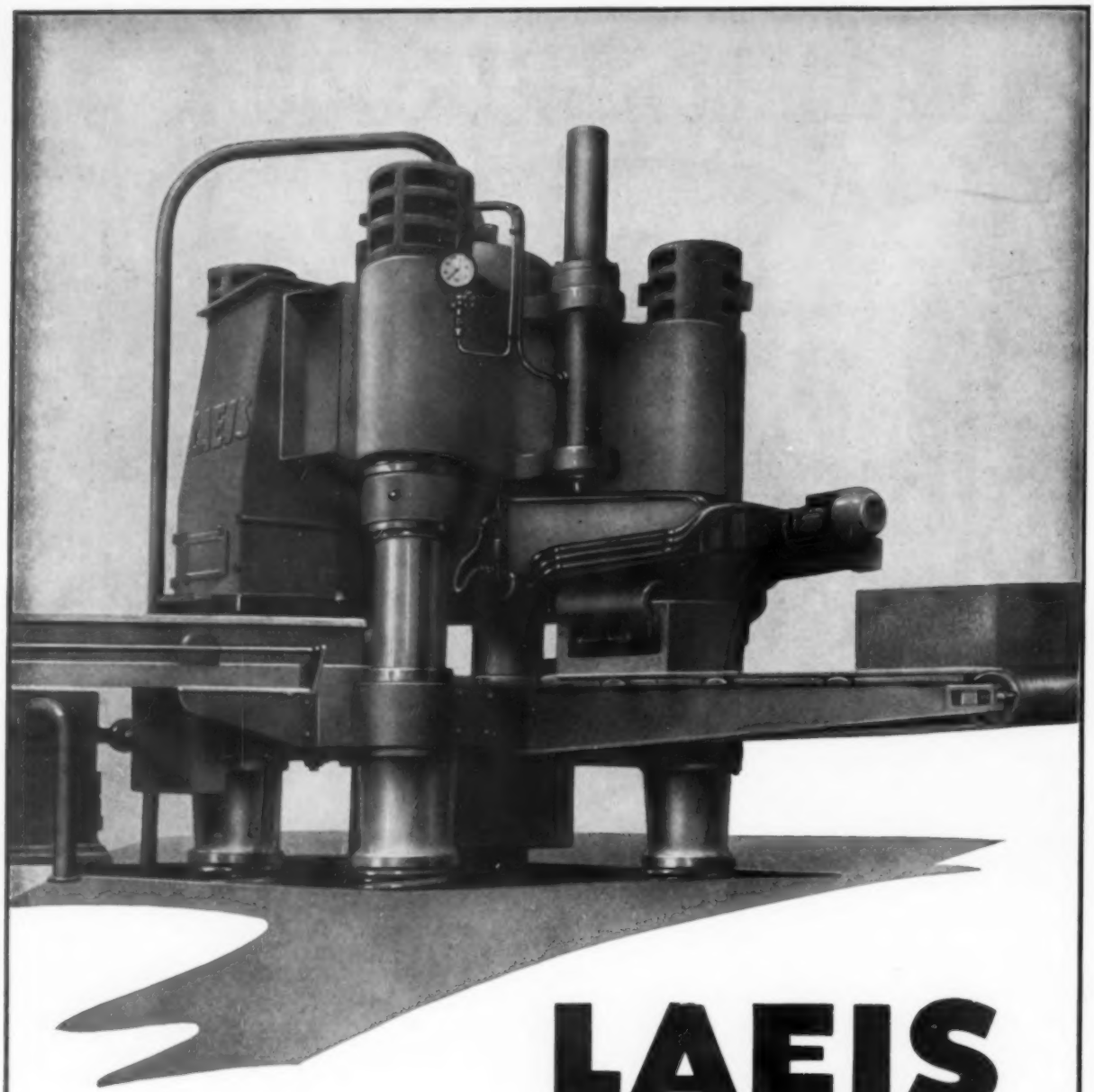
PACO Car Tops are made in a wide variety of shapes and sizes. Phone or write for complete information today.

NORTH STATE PYROPHYLLITE COMPANY, INC.

Phone CYpress 9-1441 • Greensboro, North Carolina

OTHER PACO PRODUCTS INCLUDE: • Plastic Furnace Linings • High Temperature Cement • Fire Brick • Retort Cement • Blow Off Tile • Side Car Brick • Ladle Mix • Rear Arch Tile • Plastic Cupola Linings • Cupola Blocks

Circle Service No. 11



LAEIS

COMPLETELY AUTOMATIC PRESSES "ROBOT"

Hydraulic, fully automatic presses for forming special as well as standard refractory shapes, crucibles, ceramic bonded grinding wheels and large porcelain parts. Suitable for any large shape which requires uniform dense compaction.

Pressures up to 2,000 tons total can be developed. Fully covered by German and foreign patents. These presses are being used most advantageously in the refractory industry for basic refractories, silica refractories, arches, checkers, hollow refractory tiles and blocks.

For complete information and literature write to

LAEIS-WERKE A.-G.-TRIER
Western Germany

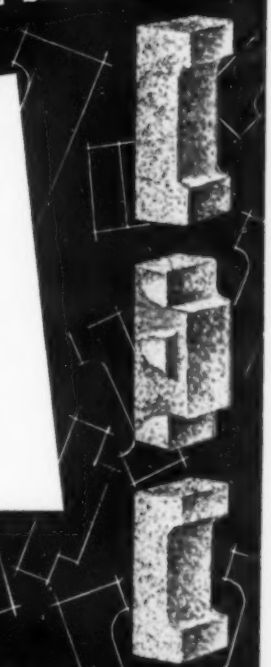
Circle Service No. 12

In these days when industry is faced with cost increases for labor and materials . . . brick and tile plant operators are demanding improved quality refractories specifically designed to give longer, more efficient service. Throughout the Structural Clay Products Industry, the trend is swinging to the use of *creatively engineered* refractories manufactured by the A. P. Green Company.

Operators today are compiling enviable service records with A. P. Green tunnel kiln car tops, kiln floor tile, sidewall, and crown brick. Kiln design, methods of firing, type of fuel and operating temperatures . . . all affect refractory service, but A. P. Green refractory products have been especially developed and tested to more than meet the requirements of tunnel kilns and down draft kilns.

HOW TO REDUCE REFRACTORY COSTS . . . INCREASE SERVICE LIFE

These products are strong, have greater resistance to thermal shock, exceptional stability under load at high temperatures, fulfill many of the requirements of diversified kiln operation, and require minimum maintenance. For engineering know-how plus detailed information on service and specific recommendations, contact your local A. P. Green representative or write A. P. Green Fire Brick Company, Mexico, Missouri.



A. P. Green REFRACTORY PRODUCTS

A. P. GREEN FIRE BRICK COMPANY

Mexico, Missouri, U. S. A.

Plants: Mexico, Mo.—Woodbridge, N. J.—Sulphur Springs, Texas—Jackson, Oak Hill, South Webster, Ohio—Climax, Tarentum, Philadelphia, Pa.—Troy, Idaho—Pueblo, Colo.—Macon, Ga.—Birmingham, Ala.

In Canada: A. P. Green Fire Brick Company, Ltd., (Weston) Toronto, Ontario

Circle Service No. 13

KENNEDY PRODUCTS
FOR THE CERAMIC INDUSTRY

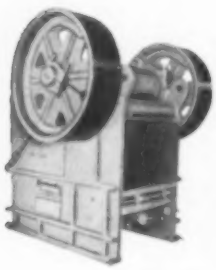
KENNEDY GRANULAR MATERIALS PREPARATION SYSTEM

From the initial raw material to the final blend of ingredients, the KENNEDY system provides the careful preparation, handling and accurate proportioning so necessary to quality ceramic products.

What are some of the advantages of the KENNEDY Designed System?

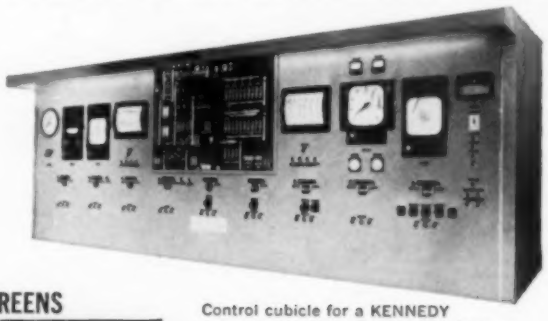
- Single responsibility for the performance of the entire system.
- Maximum utilization of raw material.
- Production of mixes to optimum maximum density within ±1%.
- Highest reproducibility.
- Complete automation; entire operation easily supervised at one station.
- Higher efficiencies, lower labor costs.

A KENNEDY Granular Materials Preparation System can be designed and built for any raw materials which require reduction, fractionation and blending.



KENNEDY CRUSHERS

KENNEDY Roll Crushers produce high quantities of product within narrow size ranges. KENNEDY Jaw & Gyratory crushers are important for primary and secondary preparation.



Control cubicle for a KENNEDY Granular Materials Preparation System

KENNEDY BALL, ROD & PEBBLE MILLS

The KENNEDY Air Swept Mill provides unusual control over production of fine grinds. The Pebble Mill eliminates metal contamination in grinds down to 25 microns.

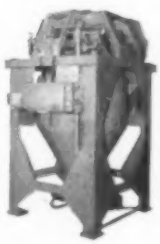
KENNEDY ROTARY KILNS

KENNEDY Kilns, Coolers, Firing Hoods and other accessories are important components of many ceramic materials preparation operations.

KENNEDY SCREENS

KENNEDY open or closed multideck screens provide the close separation of size fractions required for the most effective use of the available raw materials.

KENNEDY PNEUMATIC CONVEYING SYSTEMS



These systems handle powdered or granular materials without motors, feed screws or other major moving parts. They are simple, flexible and economical.

KENNEDY AIR-FLOAT CONVEYOR

The smooth, durable, porous tile conveying surface of the KENNEDY Air-Float Air-gravity conveyor assures low-cost, maintenance-free conveying of granular solids.

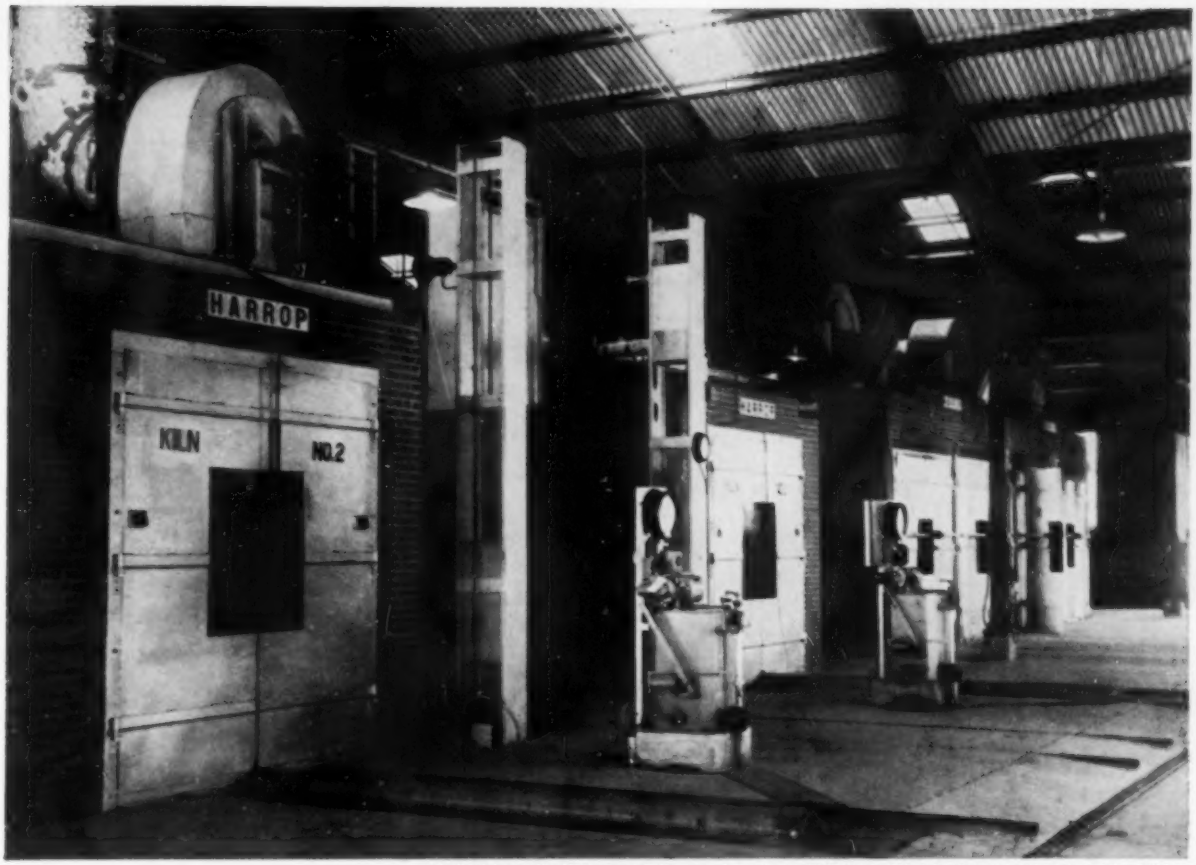
• • •

KENNEDY's reputation for sound design, high performance and quality equipment is recognized in many industries all over the world. We invite your request for further information.

KENNEDY VAN SAUN
MANUFACTURING & ENGINEERING CORPORATION
405 PARK AVENUE, NEW YORK 22, N.Y. • FACTORY: DANVILLE, PA.

Primary & Secondary Gyratory Crushers • Jaw Crushers • Roll Crushers • Impact Breakers • Hammer Mills • Rod & Ball Mills • Kilns • Kiln Accessories • Dryers • Scrubbers • Screens • Pneumatic & Mechanical Conveyors • Complete Crushing, Lime, Cement & Carbon Paste Plants
KENNEDY Testing & Research Service

Circle Service No. 25



With Bickerstaff, it's Harrop all the way. L to R, new 290′ Harrop kiln (No. 2) in operation since May, 1959; original Harrop Kiln (No. 1), installed in 1955; new 136′ Harrop twin-tunnel dryer; original Harrop twin-tunnel dryer installed with Kiln No. 1. View shows discharge end of dryers, charging end of kilns.

Why Bickerstaff Brick specified a second Harrop installation

The original Harrop dryer and kiln installation for the Bickerstaff Brick Co., Columbus, Georgia, was profitable from the start. It had a design capacity of 50,000 8″ equivalents per day but, when needed, daily production peaked to 64,800. This is a healthy 30% bonus output of red and flashed red face brick, both cored and solid types.

When Bickerstaff decided to double capacity in order to handle increased sales volume, they wanted the new installation to match this record of efficiency. Naturally, they called in Harrop again to design and build the second dryer and kiln.

Frank Bickerstaff, Jr., President of the 70-year-old company whose products are well-known throughout the Southeast, reports: "Harrop designed and built extra efficiency, extra performance into our dryers and kilns. They proved it to us, twice-over."

Call in Harrop for new dryer, kiln or plant design, or modifications, that will assure you of efficient and profitable production. Our non-obligating consultation service brings you the benefits of 38 years of proven engineering and construction experience.

Work crew loads kiln cars directly from off-bearing belt. Each kiln normally handles 16 cars per 24-hour day, 3,600 brick per car. Normal daily production for these two Harrop dryer and kiln units averages 115,200 brick, at least 15% above design capacity.

Kilns discharge fired brick. Harrop Kiln No. 2 (foreground) differs from original kiln (left) it closely resembles by introduction of excess air burners ahead of firing zone. These air burners provide an even "heat-up," assure amazingly uniform shrinkage of these surface-clay brick.

Practical Ceramic Engineering, Put Profitably to Work

HARROP

TUNNEL KILNS • DRYERS • PLANT DESIGN

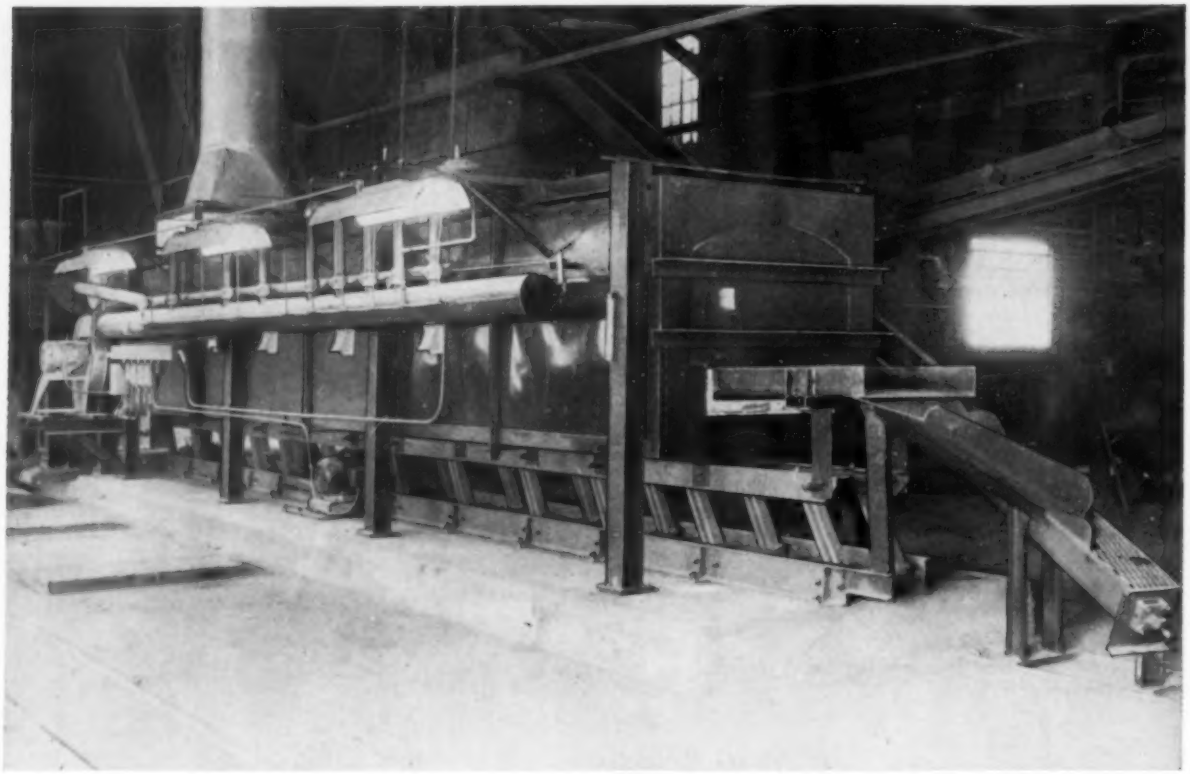
Harrop Ceramic Service Co.

35 EAST GAY STREET, COLUMBUS 15, OHIO

Western Representative: Fred J. Ford, Room 413, 35 E. Gay St., Columbus 15, Ohio. **Southwestern Representative:** Process Engineering Service, 6936 San Pedro Ave., San Antonio, Texas.

Harrop Precision Furnace Co. (division of Harrop Ceramic Service Co.), 3470 E. Fifth Ave., Columbus 19, Ohio . . . laboratory, industrial and school furnaces.

Circle Service No. 15



Miller Calcining Furnace installed at West Brothers Brick Co., Washington, D.C. Prefires raw materials and cuts density of brick in both green and fired states.

PROBLEM:

Needed—A Low Cost Method For Treating Wet, Sticky, Carbonaceous Material That Produces Excessively Dense Ware With High Shrinkage.

SOLUTION:

Calcine The Material In A Miller Vibrating Hearth Calcining Furnace.

The Miller Calcining Furnace fires up to 5 tons of wet, ground material per hour and produces a fine-grained, calcined material that will contribute to higher quality ware. It removes water, carbon and other combustibles from the raw material. The Miller Vibrating Hearth Calcining Furnace operates in a temperature range from 1200 to 2000 degrees fahrenheit.

Brick produced from material that has been fired in a Miller Calcining Furnace are less dense in the green stage, dry faster, have more complete oxidation, are free of glass and cooling cracks, and they are of a more uniform size.

Look To Miller For The Finest In

Tunnel Kilns / Kiln Cars
Hammermills / Engineering Services

Miller Equipment Company

P. O. Box 1566 • Phone ME 3-3541 • Salisbury, N. C.

Pacific Agent:
WALTER C. STOLL & SONS
5028 Alhambra Avenue
Los Angeles 32, California

Circle Service No. 16

When you call in *specialists*...

. . . you get a ceramic plant designed for economical operation and quality product. Because ceramic plant specialists have the know-how and the proficiency to provide the complete, coordinated and mechanized plant package to manufacture your structural clay products from the receiving of your raw materials to the shipping floor of your finished product.

That is why it will pay you to consult engineers specializing in ceramic plant design and installation.

Tunnel Kiln

(above) Hendryx-designed, 280 foot tunnel kiln with three separately controlled firing zones and quenching and annealing zones, for burning buff face brick. Waste heat is salvaged for use in dryers.

Manufacturing Unit

(right) This unit, serving a tunnel brick kiln, extrudes, molds and cuts in a compact and efficiently arranged area, economical of plant floor space.

Setting Kiln Cars by "Lowervator"

(below) Platform is lowered at slow, adjustable speed for uniform level setting. Eliminates stooping and lifting, increases setting speed 50%, cuts setting tracks and labor cost 33%. Cars are moved on, off and along tracks automatically.

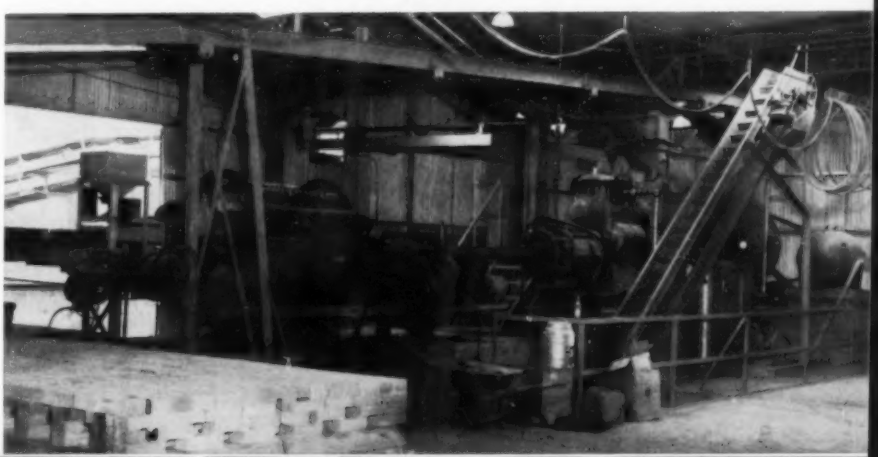
A Recently-built Plant

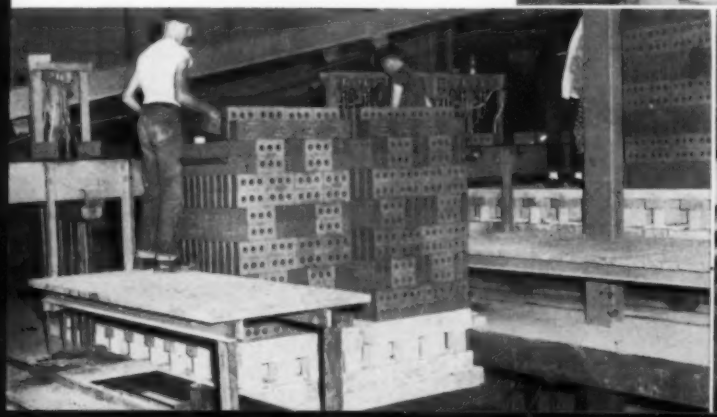
(lower right) Dryer racks of green sewer pipe in foreground; loaded kiln cars in background. Overhead are waste heat pipes from kiln to dryers.

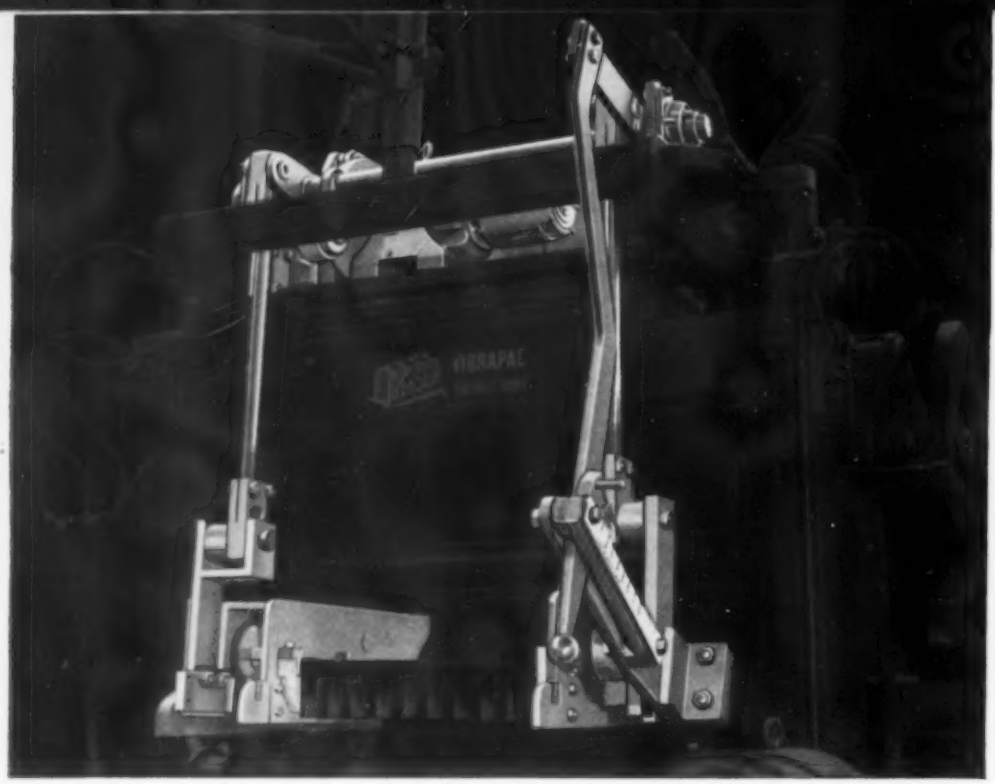
HENDRYX
CERAMIC PLANT DESIGN

DWIGHT B. HENDRYX AND ASSOCIATES
6621 Darlington Road
PITTSBURGH 17, PA.

Circle Service No. 17







Every block the same ...every time!

Vibrapac "electric brain" maintains uniform finish time

The Vibrapac Automatic Feed Control frees you from dependence upon guesswork feeding. A large dial shows you the seconds — even fractions of seconds — of finish time.

As a result, you enjoy these four dollars-and-cents advantages:

1 **Consistent Production.** Your Vibrapac runs at the same speed continually, minimizing wear and tear — and producing at a constant rate. It doesn't slow down one minute and speed up the next to compensate for irregular feed or mixture.

2 **High-Quality Block.** The amount of feed to the mold is adjusted automatically. Finish time is uniform. And so is quality—block after block.

3 **Less Material Waste.** The density of every block is controlled — each has a predetermined amount of material. There are no overweight or underweight units.

4 **Less Supervision Required.** Supervisor merely checks dial to see that specified feed is being maintained.

Automatic Feed Control is standard equipment on all new Besser Vibrapac machines. It can be installed also on the older Vibrapacs you now have, to help you make more money by producing better block faster. Get the facts. Ask the Besser representative.

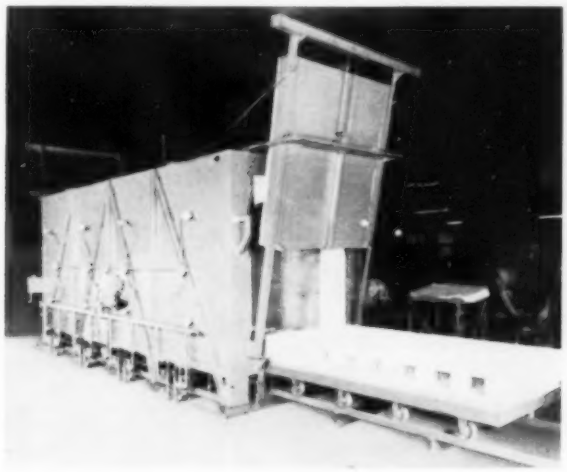
CONTROL PANEL, with 10" dial. Indicates the exact finish time in seconds and fractions of seconds. Panel includes feed and finish-time setting — and selector switch for either automatic or hand operation.

BESSER Company Dept. 139 Alpena, Michigan, U.S.A.

Complete Equipment for Concrete Block Plants

MATERIALS & EQUIPMENT IN THE NEWS

Dickinson Automatically Controlled Shuttle Kilns



The Dickinson open-fire car shuttle kilns are all of the same general type, both in construction and operation. The kilns are all non-muffle, stackless, with a multiple unit burner system from 16 to over 100 burners. There is a great variety of sizes and interior dimensions. The number of car units varies according in size from one to four in large units.

Burners fire through ports in the floor of the side walls of the kilns and under cars. The burners are grouped to operate from two, four or eight separate manifolds, each manifold with a separate control valve or automatic solenoid valve. Each burner group is provided with a diaphragm pressure gauge for accurate regulation. Different groups of burners heat in different areas of the kin, end for end, and top to bottom, equalizing distribution.

With its multiple burners arranged in groups controlling different areas, the kiln lends itself to the West Corp. program scanning control unit, with either two, four or eight station control. This automatic control unit consists of a cam-type program controller to govern the complete firing schedule. In addition, an indicating pyrometer, a timer scanning device, solenoid valves, and thermocouples complete the control system. The scanning device takes temperature readings at short intervals and adjusts the heat in each section by means of solenoid valves. *Denver Fire Clay Co.*

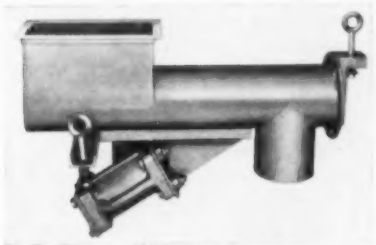
Circle Service No. 70

New Low Cost Tubular Pneumatic Feeder Cuts Operating Costs

Their new Model NFT 4-840 tubular pneumatic feeder has just been announced by National Air Vibrator Co.

The new feeder has a tube 8″ in diameter by 40″ long, uses a Navco air vibrator that consumes only 16 c.f.m. at 50 p.s.i.

According to the manufacturer, the Navco feeder features a one-piece vibrator design with a silent type vibrator piston as the only moving part. The Navco feeder requires no expensive stock of spare parts,



cuts vibrator maintenance up to 80%. Vibrators can have tapped ports for exhausting directly to remote areas in food or pharmaceutical plants. Feeders can be furnished in carbon steel, stainless or aluminum.

The manufacturer also states that a wide range of flow rates can be obtained simply by varying the air pressure range from 20 to 70 p.s.i. . . . thus varying the vibrations per minute. Solenoid valves can be arranged for automatic control. *National Air Vibrator Co.*

Circle Service No. 71

Rubber Faced Steel Plate Reduces Breakage of Slabs

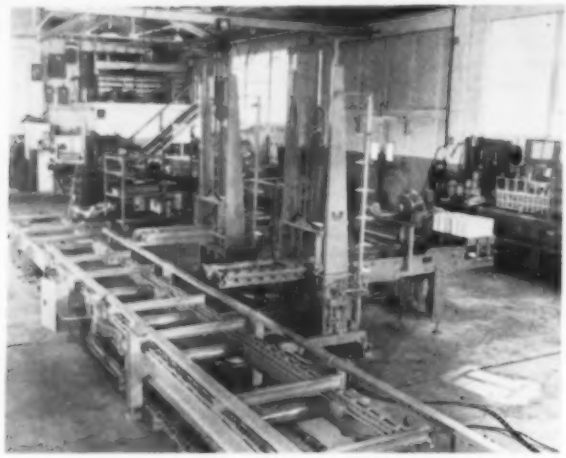
The Pre-Cast Tile & Slab Co. worked out the unusual cushioning strips of rubber faced steel plate shown in the illustration and la on slab trailers. Before rubber faced strips were used, many other materials, such as felt, were tried without success. Breakage of green concrete slabs has been substantially reduced. About $30 per month per truck is saved with rubber protection. With approximately 20 trucks in operation, material handling costs have lowered as much as $600 per month.

Rubber faced steel plate is made in sheets up to 48″ x 144″. Rubber is bonded to steel sheets (16 and 20 ga.) in thicknesses of ¼″ to 1″. *Gates Rubber Co.*

Circle Service No. 72

← Circle Service No. 18

Automatic Block Equipment Adapts To Brick Making



The Columbia Automatic Rack Loader and Unloader is well known to the block industry and has had several years of field use and many satisfied customers. Its use in the brick industry is relatively new, mainly because no one thought it contained such flexibility.

On any block machine turning out brick, in order to go completely automatic the Columbia Rack Loader and Unloader is desirable. As the brick leave the machine on their steel pallet, they are brought forward via a powered roller section to an elevator that correctly positions two complete pallets of brick in a curing rack, indexing as the complete bay is filled to an open bay and continuing to cycle entirely free of human handling. Everything is adjusted to handle the maximum output of the machine with sufficient reserve speed to hande the output of any machine on the market today and any of those conceived in the future.

At the same time the loader is loading a rack with green brick, along side an unloader is unloading a rack of cured brick. This too is geared to the output of the machine. As soon as the rack of cured brick is completely stripped it moves into place in front of the loader and is immediately reloaded with green brick.

A new feature being added for the brick industry is a new double push off and brick turnover assembly, in which the brick are pushed from their pallet onto a table. They are then pushed onto a conveyor belt leading to a gentle turning cycle laying the brick on their side. As they travel down the conveyor, laying on their side, they are easily grasped by tongs to be stacked. All these movements are completely automatic. *Columbia Machine, Inc.*

Circle Service No. 73

New Coating Prevents Materials Sticking to Bins

Frederic B. Stevens, Inc., has introduced a new epoxy coating that prevents granular and abrasive materials from sticking to bins, hoppers and all types of storage and materials handling equipment.

This new inexpensive easy-to-apply material, called Epoxy Resiweld, imparts an extra hard glass-like covering on practically any surface. Exhaustive tests under the most severe conditions proved that this new coating resists wear and reduces sticking by nearly 100%. *Frederic B. Stevens, Inc.*

Circle Service No. 74

"Quick Check" Hand Held Potentiometer

The "Quick Check" is a compact portable potentiometer designed to give the accuracy and ruggedness required in a hand held testing instrument. With the instrument, the problems of battery balancing, thermocouple polarity, ambient temperatures and conversion charts are eliminated. Simple insert the thermocouple, press the button and read.

Built with ranges from —450° to 3200°F, in spans of as little as 250°, it is claimed that the instrument offers accuracy of one half of one percent. *Pyrometer Service Co.*

Circle Service No. 75

NEW LITERATURE

New Price Sheet—A new price sheet for Erie Clamshell Buckets is now available. This new sheet is prepared especially for insertion into salesmen's crane catalogs for quick reference in quoting on Erie Buckets. *Erie Strayer, Erie, Pa.*

Circle Service No. 76

New Regulator Catalog—A new 8-page Temperature Regulator Catalog, TCV-1, is now available. The free catalog is fully illustrated and contains complete engineering information and technical data on OPW-Jordan's line of Temperature Regulators. *OPW Jordan.*

Circle Service No. 77

Flexible Couplings—An expanded line of Dodge Para-flex Flexible Cushion Couplings that absorb vibration and compensate for all combinations of shaft misalignment and end page bulletin. *Dodge Manufacturing Corp.*

Circle Service No. 78

Clipper Core Drill—This firm announces a new, colorful, four-page price catalog available on their complete line of Core Drills and Diamond Core Bits.

Featured are electric, gasoline, and air powered models of core drilling accessories. *The Clipper Mfg. Co.*

Circle Service No. 79

Wall Chart for Engineers—A reference Table for Engineers and other Executives in Wall Chart form has been published. This Conversion Chart is amazingly useful for engineers, shop men and other executives.

Included are common conversions such as inches to centimeters or watts to H.P. as well as many conversions that are difficult to locate in reference manuals. *Precision Equipment Co.*

Circle Service No. 80

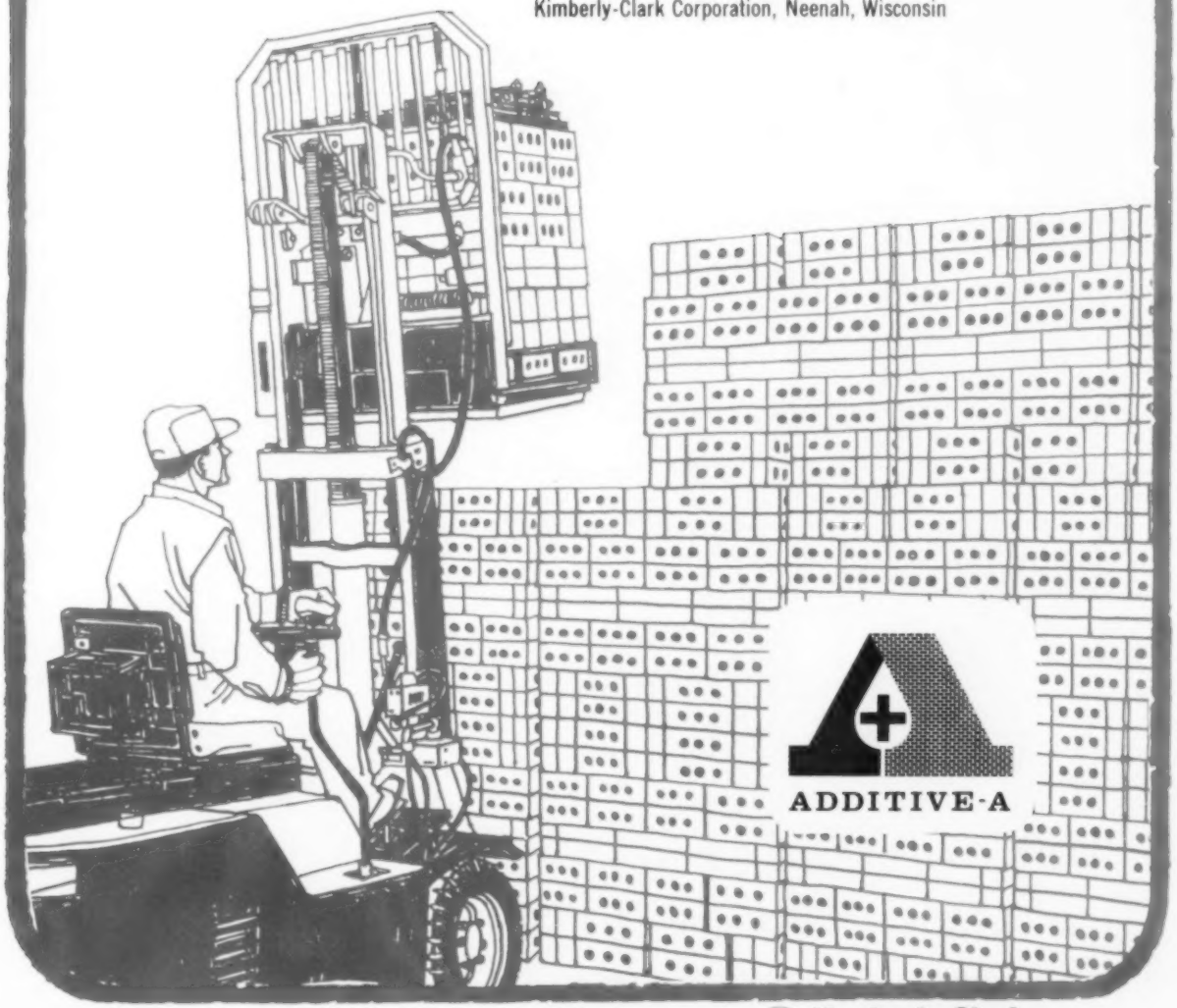
Modern Thickeners—A new 24-page brochure, Bulletin No. 3002, describes a complete line of Thickeners for chemical, metallurgical and industrial processing. *Dorr-Oliver, Inc.*

Circle Service No. 81

OHIO BRICKMAKER INCREASES DRY GREEN STRENGTH WITH ADDITIVE-A®

ALLIANCE, OHIO—"Since we started using Additive-A clay conditioner there has been a general improvement in the quality of our finished ware," says Mr. James Wilcox, president, Alliance Clay Products Co. "We're getting more uniform temper at the pug mill and extrusion is easier with less power. Drying time has been shortened and drying temperatures reduced. Both wet strength and dry green strength have increased thereby reducing chipping and breakage of dried bricks."

For descriptive folder on Additive-A, write to:
Chemical Products, Department No. BCR-101,
Kimberly-Clark Corporation, Neenah, Wisconsin



Contributing Associate S C P I Kimberly-Clark

Circle Service No. 19

THEY LAST LONGER!

—America's Quality Pillow Blocks

For 37 years Dodge Pillow Blocks with Timken Bearings have been proving their superiority under extreme service conditions in *all* kinds of applications throughout industry.

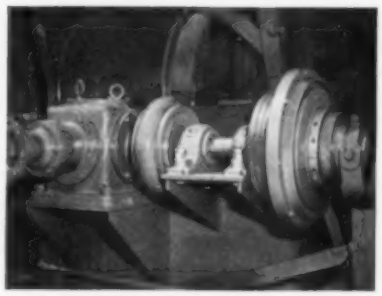
They are noted for their ruggedness. They are built to outlast the demands of the jobs on which they are used. And they carry their loads—radial and thrust, or any combination of the two—with minimum attention.

Dodge takes no chances with the fine precision built into these pillow blocks. They are painstakingly assembled, expertly adjusted, pre-lubricated and SEALED at the factory. You slip them onto your shaft in mint condition—and they stay that way!

There are 5 types of Dodge Pillow Blocks with Timken Bearings—Type E, Double Interlock, Type C (all with shaft sizes from 1-7/16″ to 4-15/16″, and down to 1-3/16″ in Type E), Special Duty with shaft sizes to 12″ and All-Steel—2-15/16″ to 10″. Available from your Dodge Distributor's stock. Call him, or write us for technical bulletin.

Dodge Manufacturing Corporation, 4900 Union St., Mishawaka, Ind.

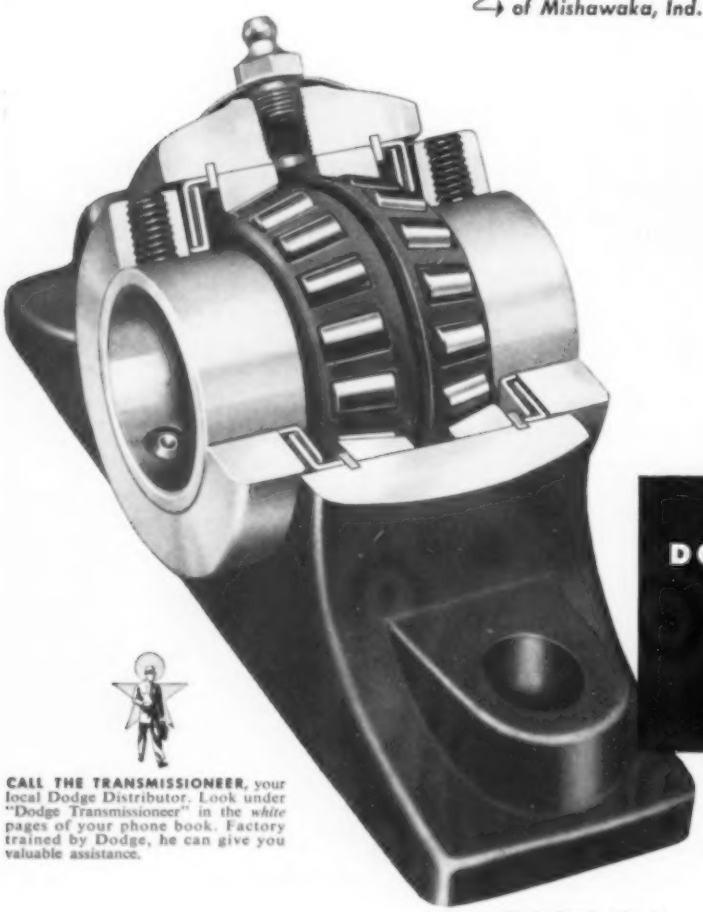
The Products with the Pluses... **DODGE** *of Mishawaka, Ind.*



Dodge Type E Pillow Blocks with Timken Bearings used for the drive hook-up of a rotary percussion drill.

Dodge Type C Pillow Block with Timken Bearings in cement plant — one of 4 in use on elevators since 1930.

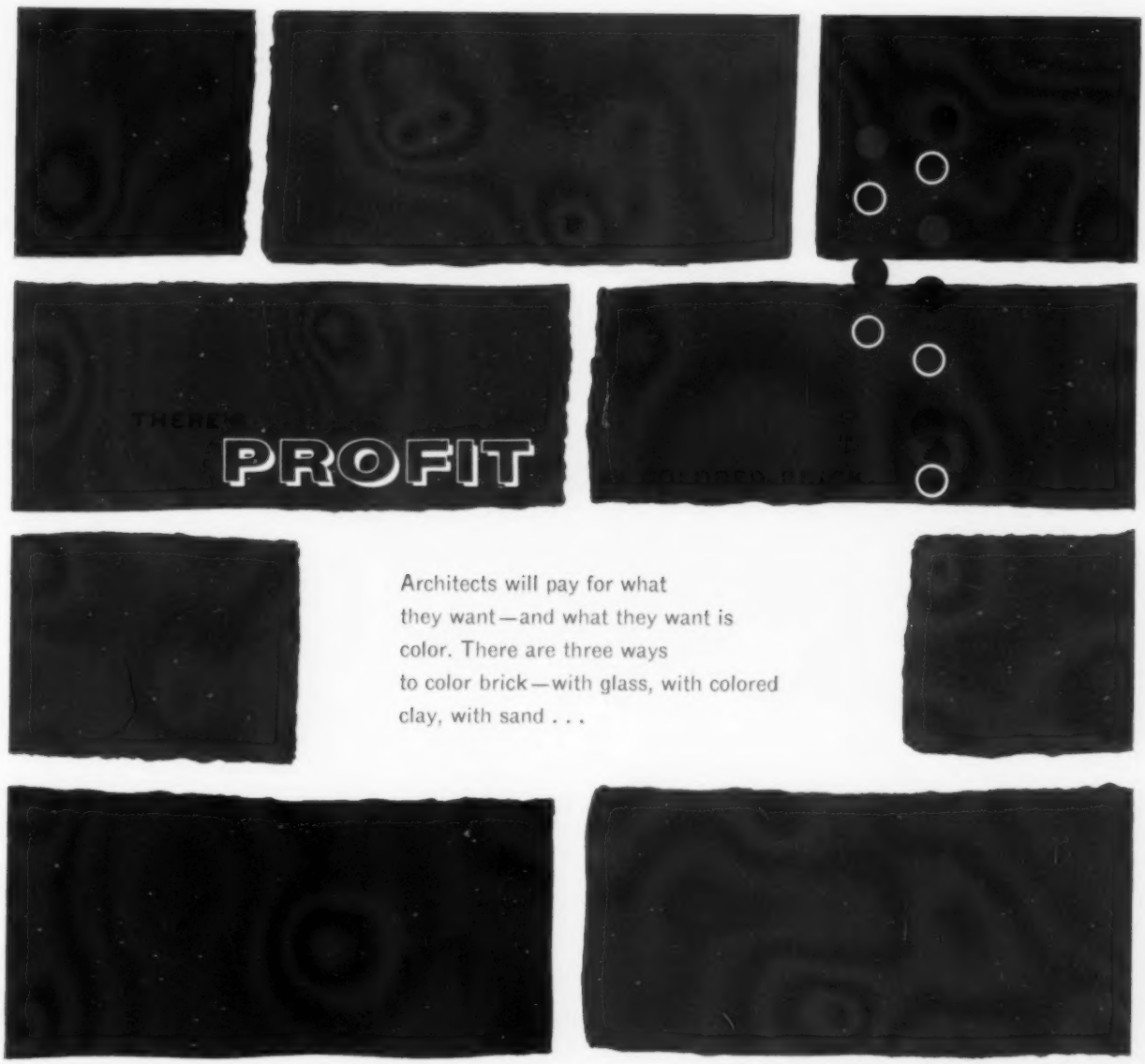
Dodge Special Duty Pillow Blocks with Timken Bearings used on a skip hoist bull wheel for a blast furnace.



DODGE PILLOW BLOCKS with TIMKEN BEARINGS

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Look under "Dodge Transmissioneer" in the *white* pages of your phone book. Factory trained by Dodge, he can give you valuable assistance.

Circle Service No. 20



Architects will pay for what they want—and what they want is color. There are three ways to color brick—with glass, with colored clay, with sand . . .

GLASS.
A ceramic glaze gives brick sparkling, brilliant color that gleams like jewels. Pemco will develop a ceramic glaze formula for your brick. Send pieces of fired and greenware.

CLAY.
Engobes coat bricks with velvety, matt-finish pastels. This is beauty that is new for brick—vastly desirable and very saleable. Send for a sample of dry engobe, ready to use. Just add water and spray on green brick.

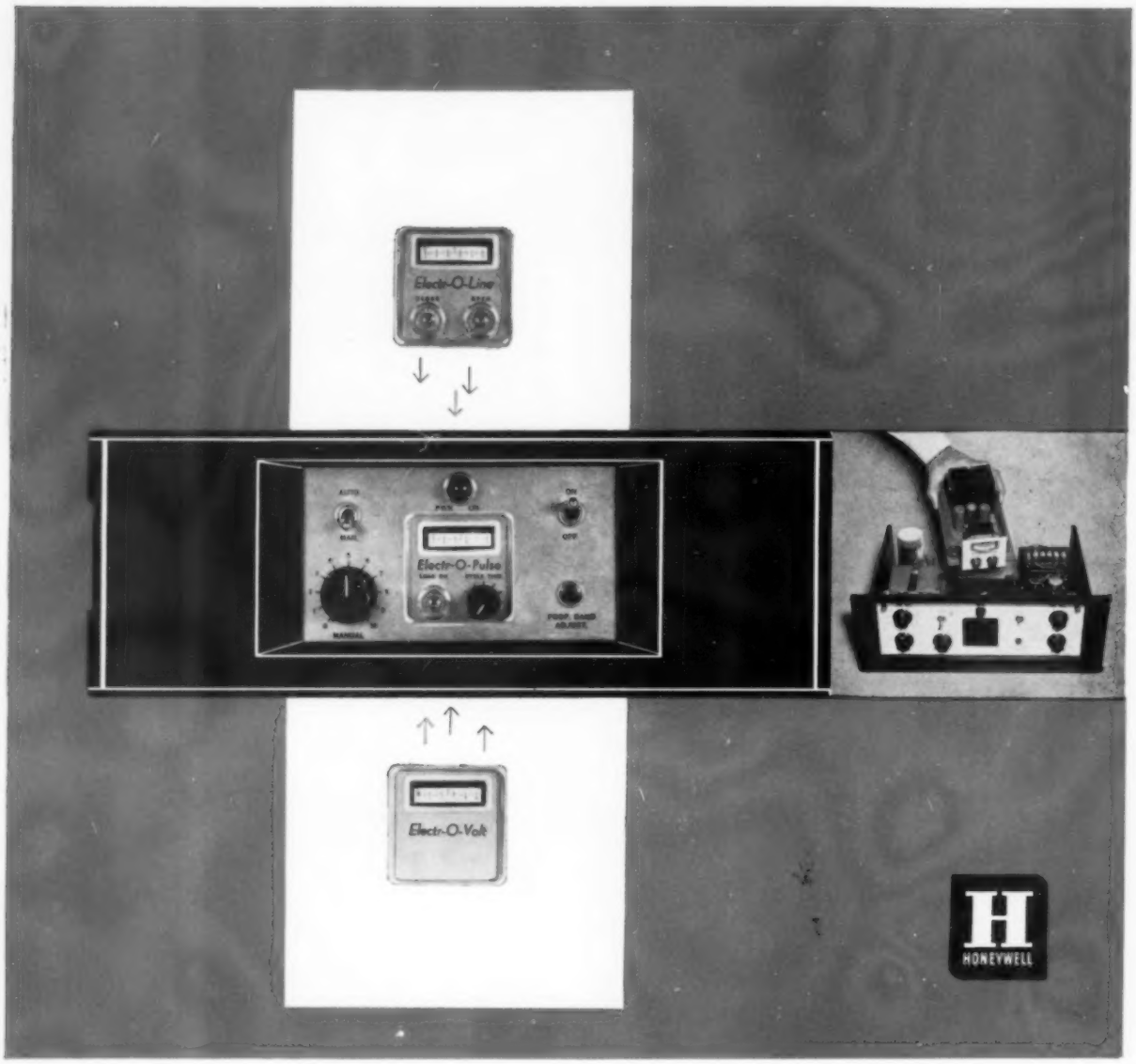
SAND.
These coatings give brick a weathered look that architects admire. To make the sand adhere, or to improve the color, write to Pemco about Bricwite—with or without colored stain added.

RESEARCH AND A FLAME

PEMCO®

Ceramic frits, inorganic pigments, vitrifiable glass colors BALTIMORE 24, MARYLAND

Circle Service No. 21



Three ways to get peak performance from your furnaces!

1. Electr-O-Line Control Unit for position-proportioning control with reset and rate action.
2. Electr-O-Pulse Control Unit for time proportioning control with reset and rate action.
3. Electr-O-Volt Control Unit for current-proportioning control with reset and rate action.

These new Honeywell three-mode control units can actually improve the performance of your furnaces by providing the exact temperature that's needed. They include features that cannot be matched: Smooth three-mode control with extra-wide band adjustments. You can adjust the proportional band up to 500%; reset action from 0 to 100 repeats per minute; and rate time from 0 to 10 minutes. "Auto-man" switching is bumpless.

Modular construction with interchangeable control output sections. Modular plug-in construction is used throughout. Amplifier and power supply sections are the same for all three units.

For more complete details on these and other types of furnace controls, contact your nearby Honeywell field engineer. Minneapolis-Honeywell, Wayne and Windrim Aves., Phila. 44, Pa. In Canada, Honeywell Controls, Ltd., Toronto 17, Ont.

Honeywell

H First in Control SINCE 1885

HONEYWELL INTERNATIONAL Sales and Service offices in principal cities of the world. Manufacturing in United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

Circle Service No. 22

Editorial

We Have Just Begun

The September editorial, which was the second in a series on research, talked about the dollars and cents value of research projects already completed and it was intimated that there were many more ready for use and soon to be revealed. We want to discuss these in this third editorial on research.

Those projects which either have been developed or are in the process of development by the research foundation are many. For instance, "SCR acoustile,"(1) improved mortars, efflorescence control, "SCR brick-pak,"(2) improved cleaning techniques, "SCR building panel,"(3) elimination of black coring, "SCR insulated cavity walls,"(4) FTI 2-way tile pack, "SCR line holder,"(5) elimination of scumming, structural research, "SCR"(3) multi-story design concept, facing tile shape simplification study, "SCR package line,"(3) thermal properties of clay masonry walls, "SCR re-nu-veneer,"(3) blast resistant design, "SCR" school design concept, stain resistant mortars, and the "SCR" tile-pak."(2)

Here is a grand choice of money making ideas for every brick man in the country. Just as money was made from the masonry process and the SCR brick, money can be made from these projects already available to everyone.

We have just begun and what the future holds for this industry was told very well by Robert B. Taylor, director of research, in a recent report on research. He said: "Today, as we look at structural clay we see a brick . . . a piece of tile . . . a fresco of terra cotta. It is what we work with today. Tomorrow they might be unimportant as such, for that clay from which they are made can be molded and burned as facilely as man's mind wishes to process it or design with it. Today, we pile one little unit on another in the wall and mortar fills in their size variations. Tomorrow they can be big and light and accurate with new mortars as strong as the burned clay itself. Whole elements will be plant assembled, out of the weather, under ideal production conditions. Reinforcing and proper design will give us true structural ceramics . . . . sheer walls, plate girders, floor panels and roof sections with built-in sound absorption and thermal insulation.

"Lightweight units will weigh 25 to 50% of current weights. Strengths and durabilities will be more than adequate. Many of these products won't be molded, pressed or extruded as today. They'll be formed directly from hot aggregate and that will fuse itself together into the size and shape desired. From this process will come the lightest and strongest building material known to date. Prestressed as floors and roofs it will span greater distances with greater loads . . . and both surfaces can be finished to meet job requirements.

"Is all this but a dream? Part of it is nearly here now! Part is just around the corner and a great deal more only a little further up the road of progress. Nearly all of this probably could be accomplished in the next 10 years."

(1) ℗ Pat Pend., SCPRF
(2) ℗ Pat. No. 2,778,491
(3) ℗ SCPRF
(4) Reg. T.M., SCPRF
(5) ℗ Pat. No. 2,715,777

Check Those Used Brick

The national administration is plugging urban renewal, not only to beautify our cities, but also ostensively to boost economy through increased construction. At the same time, the prototype contract documents for demolition recommended by Washington make considerable point over salvage, with even special reference to "cleaning of brick." They even provide for the contractor to set up shop on the demolition site and sell salvaged materials.

This situation is continuing to assume greater importance as urban development programs level buildings in hundreds of communities across the country, leaving in their wake mountain-sized piles of second-hand brick.

With national magazines glorifying these brick for their rustic appearance in the walls, it hasn't taken long for these cheap, substandard, second-hand brick to flood both the residential and commercial building markets.

All manufacturers and suppliers of new brick must furnish material which meets rigid building codes and specifications. Most of these codes and FHA regulations require that any used material conform to the same specifications. The difficulty is in getting such regulations enforced because of some irresponsible parties involved in the case of salvaged materials in general, and of brick, more specifically.

As the wrecker's ball crumbles a building, hard and well fired brick tumble into a common pile with the soft and underburned brick which were used for back-up in the old solid masonry buildings of years ago, many of them built with 20-inch to 36-inch brick walls. Although these salmon brick were suitable for their original purpose of "backing-up", they have no place in today's walls as a facing material. It is very difficult to classify these piles of salvaged brick and the buyer has no way of knowing what grade brick he is buying.

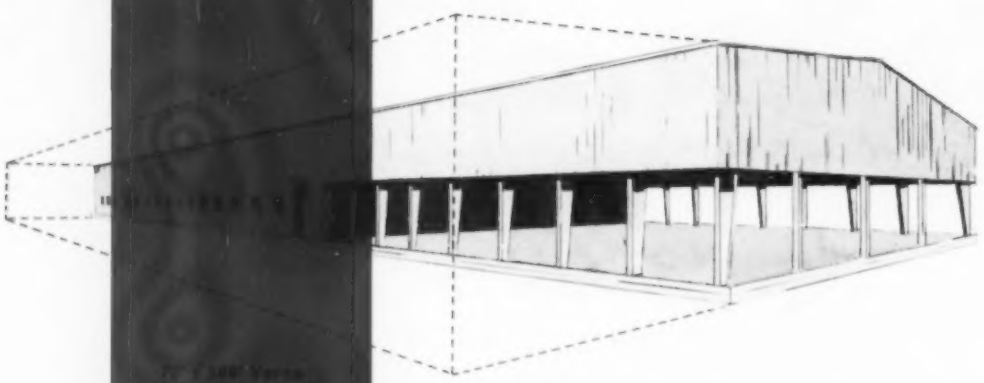
The solution lies in getting the enforcement agencies to demand proper testing with the hopes that sufficient control will eliminate the problem as being unworthy of all the difficulty.

As you see used brick being used in your market area, demand that these brick be tested for meeting both ASTM specifications and local building code specifications. Inform the building inspector of the conditions that prevail. In more instances than not, we would venture to say that they'll not comply with specification requirements.

J. J. Sree

Editor & Publisher

Built for Today . . . Planned for Tomorrow . . . a Varco Building for Alliance Clay



The Varco structure above was built to serve today's needs . . . designed to accommodate tomorrow's expansion.

At present, a single tunnel kiln is being constructed within the building. However, realizing that future demands might well require an additional kiln, Alliance asked for a building that would allow expansion in the easiest way possible. With this in mind, Varco engineers, working in conjunction with Harrop Ceramic Services and Alliance officials, designed a low pitch (1:12) Uniframe structure with a 22' wall height.

To withstand the heavy loading and snow and water pressures that will come to bear on a roof with such low pitch, Alliance's building was covered with Varco high-ribbed metal paneling and mastic sealed at all joints. This exclusive Varco panel provides extra strength without extra cost.

As shown by the dotted lines, expansion from this structure would be a simple, economical process that retains the modern lines of the original building. It would also avoid the bother and expense of gutters and down spouts that would be necessary if an additional rigid frame unit was constructed.

For over a decade, Varco has been specializing in buildings for the brick and clay industry. Your building problems are our business. Write or call for complete information on Varco Uniframe Buildings . . . the better building for less.

Varco R. G. VARNER STEEL PRODUCTS, INC. • P. O. BOX 781
PINE BLUFF, ARKANSAS • JEfferson 4-6030

Circle Service No. 23

NEWS OF THE INDUSTRY

New Tunnel Kiln Completed By Marion

The new Allied tunnel kiln at Marion (O) Brick Co.'s Brazil, Ind. works is now completed. Shown here is the new installation being dried out in preparation for full scale production. The 280-ft. tunnel kiln is preceded by a twin-track dryer 130-ft. long and was originally designed for a minimum of 50,000 brick per day. Since this photo was taken, the kiln is now producing upwards of close to its design capacity.

Plant Operators to Meet

The seventh annual Plant Operators' Forum will be held at North Carolina State College, Raleigh, N. C. on November 15, 16 & 17. The annual meeting is sponsored by North Carolina State College and Brick & Tile Service, along with Southern Brick & Tile Manufacturers' Association and Clemson College. The theme for this year's meeting will be "Size Control of Structural Clay Products".

More than 20 speakers will present papers of interest to all people attending. One session will concentrate on variations of size caused by the firing process. Other sessions will include papers on size control in other manufacturing processes, as well as a general discussion of ASTM specifications of size.

The list of speakers is made up of men well known in the brick industry including Dr. Fitzpatrick, Harbison-Walker Refractories Co., George Harrell, N. C. State College, George Bishop, Columbia Brick & Tile Co., Robert Brickhouse, Kelsey Ferguson Brick Co., Phillip Pearce, Boren Clay Products, Gil Robinson, Clemson College, John Herbert, W. G. Bush & Co., Harry Vaughn, Cherokee Brick & Tile Co., and many others.

Everyone interested in the brick industry is invited to attend this conference. Reservations for the meeting can be obtained by writing Dave Stansel, at College Extension, N. C. State College, Raleigh, N. C. Hotel reservations may be made through the College Extension or made directly with the College Inn Motor Lodge, the Sir Walter Hotel, or the Carolina Hotel.

Cunningham Elects

An election of officers was held when stockholders of Cunningham Brickyard held a special meeting at the brickyard plant located to the south of Thomasville, North Carolina.

R. M. Middleton was elected vice president and general manager. These offices had been held by the late J. Henry (Harry) Cunningham Jr., who died in a plane crash in Virginia recently. Middleton is also a newly elected director of the firm.

Certified Expands

Certified Industries, Inc., Long Island, N.Y., concrete producer, will become one of the prime suppliers of lightweight aggregate in New York and New England through the acquisition of Northern Lightweight Aggregate, Inc., Cohoes, N.Y.

Northern Lightweight will be operated as a division of Certified, and is considered to be one of the largest suppliers of lightweight aggregate in the Northeast. Upon the completion of a second kiln by the year end, it will more than double its production.

See Construction Record

The U. S. construction industry will set a new record of about $57 billion this year, one of its leading spokesman predicted.

Melvin H. Baker, founder and chairman of National Gypsum Co., Buffalo, N.Y., forecast that private and public housing starts this year will be about 1,300,000. Housing is the largest segment of the construction industry.

Mr. Baker spoke at a meeting of the Bond Club of Buffalo in the Statler Hilton hotel.

The industrialist predicted a rise in construction expenditures over the next decade to about an $80 billion annual level by 1971.

Thermal Ceramics Expands

Thermal Ceramics Industries, Inc., Denver, Colo., announced the purchase of another major acquisition in its expansion program. The new addition is the Brazil Hollow Brick and Tile Co., Brazil, Indiana, about ten miles west of Terre Haute. It has been renamed Denver Fire Clay Co., of Indiana, Inc.

Dwight C. Moorhead, president of Thermal Ceramics, said his firm has acquired all assets of the Indiana

firm, which was engaged in the manufacture of multiple channel conduit and hollow tile pipe. The facility is located on 15 acres of land with an adjoining 100 acres of clay deposits.

It contains all the basic equipment for production of refractory products, and manufacturing facilities exist for the production in their line of industrial furnaces, incinerators and kilns.

Under New Ownership

The Excelsior Brick Co., Baltimore, Md., has changed hands and will continue to operate under the name of Excelsior Clay Products Co. According to M. Lee Winkel, president of the new firm, who acquired control of the company on June 1, the company will strive to make 10 million face and common brick annually, as well as continuing its line of sewer brick. The company operates four round downdraft kilns and four rectangular updraft kilns.

Camp Brothers Sold

The Camp Brothers Co., of Mogadore has been sold to the Camp Brick Co., for $142,718.

The stockholders of the new company, which had no previous connection with Camp Brothers, announced they would increase daily production of brick from 50,000 units to 80,000.

Principal stockholders of the company are Edward C. Myers, president and general manager, and Paul L. Boltz, vice president and treasurer.

Appointments at Basic

George J. Peer, general sales manager at Basic, Inc., Cleveland, Ohio, announced recently the appointment of Charles Heilig as manager of furnace products sales. In his capacity he will assist Mr. Peer in the sale of Basic's furnace products to the steel industry. Thomas D. Hess succeeds Mr. Heilig as central district sales manager.

Like most other Basic sales and service personnel, Mr. Heilig has a strong background of experience in the steel industry.

Mr. Hess, formerly assistant sales manager of the central district, will headquarter in Cleveland, supervising refractory sales to steelmakers in the Cleveland, Detroit, Buffalo, Valley, Ohio River and Eastern Canadian steel-making areas.

Aggregate Meeeting

The Annual Meeting of the Expanded Clay & Shale Association will be held on January 12 and 13, 1962 at the Deauville Hotel, Miami Beach, Fla. The association consists of manufacturers who manufacture lightweight aggregate from clays and shales with the sinter belt, along with suppliers to the industry.

New Arizona Company

Capital Southwest Corp. of Dallas, one of the nation's largest small business investment companies which was recently financed by selling stock to the investing public, has made its first investment committment to a new company being organized in Arizona to manufacture vitrified clay pipe and other clay products.

The new company, in Phoenix is said to have a large deposit of high quality clays sufficient to supply its needs for more than 70 years. It is expected to be in operation within six months.

To Study Clay Resources

A comprehensive study is being made of Ohio's clay resources. It is to be conducted by Dr. David Webb, of the University of Illinois, for the Division of Geological Survey.

Dr. Webb will locate, measure and collect samples of Ohio's clays, with major emphasis being placed on the mineralogy of the material.

His survey will be carried out over the entire state, starting with eastern Ohio, since the more extensive deposits are known to be present there.

New Look for Texas Clay

The Texas Clay Products Co., Malakoff, Tex. is putting up a good front in the construction of its new $35,000 masonry and brick office building.

Chicago Brick Dealers Fly to Marion

Brick dealers from the Chicago area recently enjoyed the hospitality of the Marion (O.) Brick Co. as they toured the Marion plant at Brazil, Ind. and the two Marion plants in Ohio. Shown here is the Chicago group as they were winging their way towards the company's fourth annual outing in a chartered plane. More than 100 Marion dealers from the Midwest and East toured the facilities and later in the day were treated to a golf outing and dinner at the Marion Country Club.

Makes Colonial Brick

A new business geared to serve a history conscious people, has come into being at colonial Williamsburg, Va. The new firm is Colonial Brick of Williamsburg, Inc., and it will produce brick as they were made in the early 18th century.

A new generation of antiquity worshipers provides the already determined interest in authentic colonial building material for residential, business and institutional construction.

The new brick plant is four miles west of Williamsburg toward the James River. It is currently producing 60,000 brick for a new post office being built in Williamsburg, and the restoration of an old house in Surry, Va.

Robert E. Wooten is president and treasurer, with A. T. Vaughn as vice president.

C-M Appointments

G. E. Morden, general manager of the Canada Brick Division of Canadian-Marietta of Ontario Ltd., announced new appointments.

Mr. Evar Y. Carlson, has been appointed manager, Product Planning. Along with his excellent technical qualifications Mr. Carlson brings to his new responsibility extensive practical experience in the operation of a modern tunnel kiln plant and the development of new clay products.

Mr. P. R. Blake has been appointed plant superintendent. He will be responsible for the line organization in relation to mining, production, plant maintenance and shipping.

New SCPI Member

The Jackson Brick & Hollow Ware Co., Brownstown, Ind., has joined the Structural Clay Products Institute, national association of brick, structural tile and architectural terra cotta makers, SCPI Board Chairman Douglas Whitlock announced.

James P. Heller, president of the Indiana clay products firm, was welcomed into the national organization by Whitlock.

The firm is one of several which have joined SCPI in recent months.

Georgia Brick Plant's New Management Team

The new management committee of Merry Brothers Brick & Tile Company of Augusta, Georgia, meets with the company president, Kenneth H. Merry, left. Standing before a fresh kiln car of pastel brick from the new No. 3 plant are: R. W. Mulhern, manager of the sales division; H. C. Robinson, vice president; Frank C. Cheny, manager of planning and scheduling; Dorroh L. Nowell, Jr., vice president in charge of engineering and development; and William A. Faughman, comptroller and assistant secretary.

SCPI Publishes Booklet on Fallout Shelters

Fallout shelter information requests are occupying a large part of Mrs. Madelone Diamond's time these days at the Structural Clay Products Institute. As public relations department secretary, one of her jobs is to answer the stacks of letters arriving at her desk for the recently published booklet entitled "Clay Masonry Family Fallout Shelters."

Trade News

New F-R-H Representative

Clyde Humphrey, formerly of Nebraska City Brick and Tile Co., Nebraska City, Nebr., was appointed eastern sales representative, Ceramic Machinery Division, the Fate-Root-Heath Co.

He succeeds Ark G. Gilbert, who resigned recently to enter a different field of endeavor.

Alumina Price Reductions

Aluminum Co. of America, Pittsburgh, Pa., has announced price reductions for various grades of aluminas important as raw materials in the ceramic industries.

The price decreases, some amounting to one-half cent per pound, apply to certain grades of aluminas consumed by the abrasive, refractory, electronic, whiteware, and mechanical ceramic industries.

Wins Chemical Award

Dr. William Stericker, formerly development chemist and presently consultant with Philadelphia Quartz Co., Philadelphia, Pa., manufacturers of soluble silicates, was presented a distinguished service award by the American Chemical Society, Division of Water and Waste Chemistry.

The award for constructive participation in the activities of the Division for many years was presented at a recent dinner for the national ACS meeting in Chicago.

Steele Expands Offices

J. C. Steele & Sons, Statesville, N. C., has announced that they are adding a new 2-story office building to their present office facilities. The new office, with a total floor area of 4950 square feet, is being built to provide the firm with additional engineering room capacity and drafting room facilities, as well as to increase the general office space.

M & T Appointments

Three executive appointments have been announced by Metal & Thermit Corp. Leonard W. Mawhinney has been named a vice-president; R. A. Bernabo has been elevated to corporate secretary, and E. J. Robesch has been appointed assistant controller and assistant secretary.

Obituaries

Joe R. Oesch

Joe R. Oesch, 70, died recently in Memorial Hospital at Siloam Springs Arkansas, death being caused by a heart attack. A native of Cass County, Mo., he started his brick career in 1916 and ended it in 1957 when he retired to a small farm near Siloam Springs. He is survived by his wife, a son, and two grandchildren.

Samuel Clyde McCreary

Samuel Clyde McCreary, 95, a resident of New Philadelphia, Ohio, for 57 years died recently of complications following a nine year illness. He was associated with Robinson Clay Product Co., for 48 years, both in Midvale and in Akron. He retired at the age of 75 in 1941.

Elsie N. Wilcox

Mrs. Elsie N. Wilcox, 75, of Alliance, Ohio, died recently after an illness of several months. She was the wife of J. Oatis Wilcox, chairman of the board and the mother of James W. Wilcox, president of the Alliance Clay Products Co.

CARPENTER ENGINEERING SERVICES

CAN

SOLVE YOUR KILN AND DRYER PROBLEMS

A NEW CONCEPT IN DRYER DESIGN

Full utilization of circulation, recirculation, temperature and humidity control are integral features of the CES Tunnel Stage Dryer.

As the leader in design and construction of fully controlled dryers, the CES engineers put quality control the number one result in Tunnel Stage Drying.

CES dryers not only use cooling zone waste heat with maximum effectiveness, but as demonstrated in the Marshall installation, fully utilize the tunnel kiln exhaust in the drying process without scumming the ware.

TUNNEL KILN RECIRCULATION

The CES controlled recirculation and heat transfer system is engineered to allow the optimum firing cycle for your materials regardless of oxidation or other inherent problems.

Essentially uniform temperatures are maintained across the set and can be increased or held as desired in any section of the kiln from the charging door to the end of the cooling zone.

CALL OR WRITE

CARPENTER ENGINEERING SERVICES

PLEASANT ROAD, WAREHOUSE POINT, CONNECTICUT

Circle Service No. 66

SCPRF News

Current trends—and competition—in building design and construction dictate the need for the structural clay products industry to think in terms of larger units that can be laid in the wall more economically. Current emphasis on panelization also dictates the need for our industry to produce a building wall component that can be plant fabricated. To a very large extent, the clay products industry has lost the initiative to its competition and is permitting that competition to dictate the terms on which it must compete.

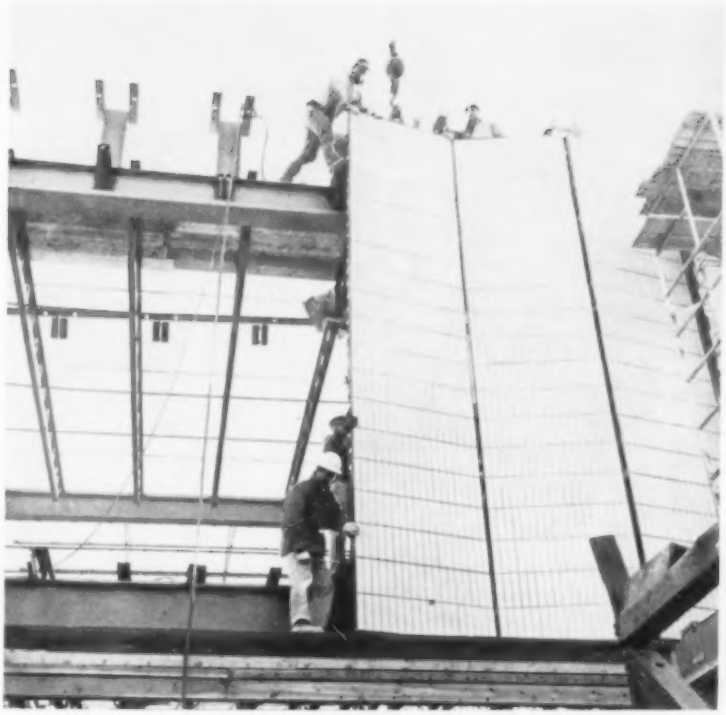
Concrete block, for example, has set the pace with respect to masonry unit sizes—sizes and weights that make them relatively economical units to lay. Our industry *can* meet that competition with an all ceramic unit whose size, weight and control of size variation will be equal to, or better than, those properties of concrete units. In addition, we would have the advantages of better dimensional stability, color and appearance. This is why the current SCPRF project aimed at the development of an all ceramic lightweight "block" is of such importance to our industry.

The metal and concrete industries have taken over the wall panel field. Whether we like it or not, plant fabricated building panels are here to stay in one form or another. The clay industry must make up its mind whether it is going to let the metal and concrete people dominate the panel market, or whether we are going to update our product by making it available in plant-fabricated panels and recapture some of the markets we are now losing. The "SCR building panel"* can be our initial step in that direction. The design and fabrication know-how is available *now* to accomplish this. (Note illustration here.)

* * *

The SCPRF—Dow Chemical cooperative program aimed at the development of a high-bond mortar has tremendous implications for the clay industry. Historically, brick has always been recognized for its strength. It is a structural material. However, this "historical strength" of brick is almost entirely confined to its ability, when laid in mortar in the wall, to withstand compressive loads. With conventional mortars, we have never been able to take advantage of the inherent tensile strength of the brick itself, because it far exceeded that of the mortar. Because the tensile strength of the new high-bond mortar approaches that of the brick, its use will permit us to take advantage of brick's tensile strength in resisting lateral loads as well as its well established compressive strength in resisting vertical loads. The trend towards thinner and thinner walls during the past several decades took away from us the mass that gave brick masonry a measure of resistance against lateral loads. With high-bond mortar our industry can get back into the ball game with a structural material whose "historical strength" has been enhanced.

* Reg. U. S. Pat. Off., SCPRF



A crew of four men attach a 4 ft. by 19 ft. prefabricated "SCR building panel" to the steel frame of a retail store building being constructed in Chicago. Although it is only 2½ in. thick, this structural ceramic wall panel was designed to withstand required wind loadings over a 16-ft. vertical span between welded supports.

* * *

Bricklayers are only human. For that reason, it is only logical to recognize the fact that there are good bricklayers, fair bricklayers, and even poor bricklayers. Human nature being what it is, however, you will seldom find an individual mason who will admit this fact. Therefore, it is refreshing to run across one who does. The foreman for a leading mason contractor in a large midwest city recently said to one of SCPRF's field man:

> "My best men were always building leads and my poorest men were always on the line. Seventy-five percent of the building was being built by my poorest bricklayers. With corner poles I can use my good men on the line a greater percentage of the time."

This is one of the best reasons we've ever run across for why a mason contractor should invest in the equipment needed to use the "SCR masonry process"* and insist that his men use it properly.

* Reg. T. M., Pat. Pend., SCPRF

MALLIX SCREEN PLATES

now standard with all leading dry pan manufacturers

The five major dry pan producers supply Mallix Screen Plates as original equipment — assuring you of maximum service life.

And you won't be risking frequent shutdowns later if you specify Mallix Screen Plates for maintenance-replacement. They outlast, outperform ordinary types because they're extra hard, extra tough to resist breaking even in the most rugged service. Mallix Plates assure fast screening, too, because slots are uniform. Smooth, clean openings assure uniform sizing.

Don't gamble. Follow the lead of the leaders and standardize on Mallix Screen Plates for continuous, uninterrupted production and over-all economy. They're available in nearly all sizes and styles.

Industrial Division

NATIONAL CASTINGS COMPANY

Cleveland 6, Ohio

AA-5421

GRATE BARS • PALLET WHEELS • PALLETS • PALLET SIDE PLATES • PUG MILL BLADES

Circle Service No. 14

CRUSHING SHALE...OR TAILINGS FROM GRINDERS?

Pennsylvania CDL Series Reversible Impactors offer 5 unique advantages

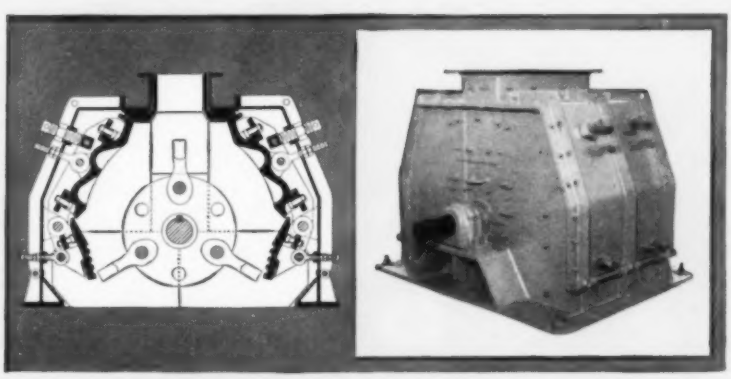
This is the crusher designed specifically for jobs where weight and ruggedness are unnecessary —such as crushing shale or tailings from grinders. To plant operators with such job requirements Pennsylvania CDL Series offers:

1. Definite wear advantage accomplished by use of cast alloy steel in all hammers and breaker blocks. Side liners are of heat-treated carbon steel.

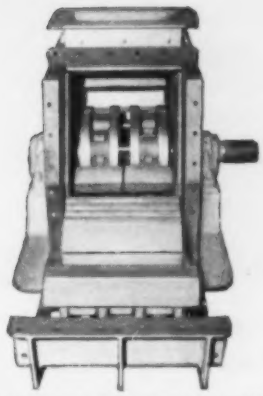
2. Adjustable upper and lower breaker blocks. In some series the upper blocks are reversible. Maximum control of circulating load and product gradation is achieved by merely moving upper and lower blocks closer to or further from the hammer circle.

3. Easy accessibility. The entire upper and lower breaker block assembly swings back, exposing the entire rotor assembly, thus holding maintenance time to a minimum.

4. Identical reduction. With breaker blocks located on both sides of the machine, and feed chute directly over center of the rotor, these units perform identical reduction when run in either direction.



• Pennsylvania CDL 7-38 Reversible Impactor



• Pennsylvania CDL 5-32 Reversible Impactor with breaker block assembly open to show easy accessibility.

5. Balanced wear. Systematic rotor reversal balances wear on both sets of breaker blocks and eliminates hand-turning of hammers—a major saving in maintenance costs for both parts and labor.

FREE BULLETIN

For full description of Pennsylvania CDL Series Impactors, as well as other Pennsylvania Reversible Impactors, write for Bulletin 6018.

PENNSYLVANIA CRUSHER DIVISION
BATH IRON WORKS CORPORATION
WEST CHESTER, PENNA.

★ ★ ★

Over 50 years' concentrated experience in all types of material reduction makes Pennsylvania your best source of crushers and engineering advice and service. Call on Pennsylvania with your next crushing problem. Representatives from coast-to-coast.

PENNSYLVANIA
BATH-BUILT
CRUSHERS

Circle Service No. 26

New Kaiser Facilities

Kaiser Refractories has announced that it will construct new facilities to its Moss Landing, Calif., seawater periclase plant for the development of advanced refractories at a cost of $1,625,000.

The Advanced Products Facilities will be an extension of the Division's basic refractories research program and will have the capacity to produce commercial quantities of newly developed refractories to laboratory standards.

At Moss landing and at Midland, Michigan, Kaiser produces periclase (magnesia) refractory grains in mammoth rotary kilns. These grains are processed into finished refractory products at plants in California, Ohio and Bronte, Canada.

Firm to Expand

A $102,000 expansion of American Clay Forming Co.'s Refractories Division in Tyler, Texas was approved by directors of the Ferro Corp., parent company.

The expansion will involve addition of a new building to the plant constituting an additional 16,000 to 17,000 sq. ft. The additional space will provide for better handling of raw materials and will increase production space.

McDowell Retires at H-W

J. Spotts McDowell, technical assistant to the president, Harbison-Walker Refractories Co., Pittsburgh, Pa., retired recently after 58½ years of service.

Mr. McDowell at one time in his career with the company was director of research and was co-editor of four editions of "Modern Refractory Practice."

Publish New Directory

The 1961 Product Directory of the Refractories Industry in the United States, just published, lists 3,543 different brands of refractories for the lining of the industrial furnaces of the nation. This represents an increase of 24% over the number included in the previous directory published in 1958.

The 224 page 1961 Directory, the only single source of information on "who makes what and where" in the Refractory Industry, gives a company-by-company breakdown of products.

H-W Names Ralston

Thomas E. Ralston has been appointed general production manager for Harbison-Walker Refractories Co., Pittsburgh, Pa. He succeeds Harry H. Yeager, who retired effective October 1.

TRI to Meet

The 1961 Fall Membership and Board of Directors Meetings of The Refractories Institute will be held at the Grand Hotel, Point Clear, Ala., on Thursday and Friday, November 9 and 10. Initial announcement of this important Institute meeting was mailed to the official representative of each member company on Sept. 5.

William S. Lowe, president of A. P. Green Fire Brick Co., will be guest speaker. His subject will be "Communism in Russia and its Satellites", being an account of personal experiences behind the Iron Curtain during a recent vacation trip. Guests, including the ladies, are invited to attend the meeting.

Wellsville Superintendent

John H. Bender was recently appointed as plant superintendent by the Wellsville Fire Brick Co., Wellsville, Mo.

Garber Receives Management Award

NMA Gold Knight of Management Award, the first ever given in Pennsylvania, was presented to Earl A. Garber, (left) Chairman of the Board of Harbison-Walker Refractories Co., Pittsburgh, Pa.

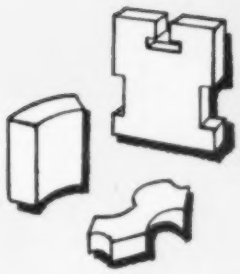
Presenting the Award is David Vandevort (right) of National Supply Division of Armco Steel, chairman of the Gold Knight Award Committee of the Western Pennsylvania Area Council of the National Management. Association. Looking on (center) is the Rt. Rev. Dennis O. Stritmatter of St. Vincent Abbey.

Mr. Garber was selected from a group of district industrial leaders nominated for the award by member clubs of the Council, the selection being based upon his contributions to the field of management.

Circle Service No. 24 ⟶

PUT *Air Power* TO WORK

FOR PROFIT ON SPECIAL SHAPES



HANDLES ALL REFRACTORY MATERIALS.

WHY TIE UP production presses for short runs on special shapes?

Here's how it works:

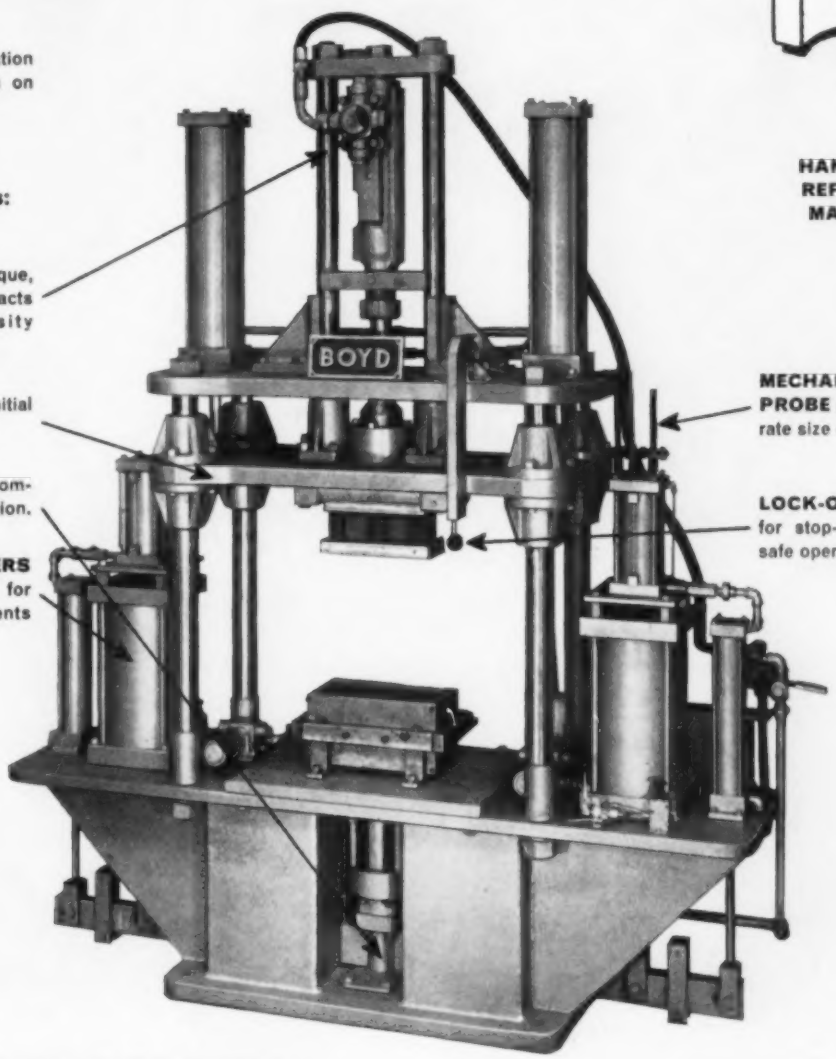
TOP TAMPER of unique, heavy duty design compacts mix to desired density after . . .

CROSSHEAD exerts initial pressure—and holds it.

BOTTOM TAMPER completes top-'n-bottom action.

RETARDER CYLINDERS give oil-cushion action for smooth ejection, prevents "popping."

BOYD BUILT— for dependability.



MECHANICAL PROBE assures accurate size control.

LOCK-OUT LATCH for stop-start assures safe operation.

SHAPE-O-MATIC . . . a new Compacting Press by BOYD

Here's the press that is destined to do away with unnecessary and costly hand molding of special refractory shapes.

The new Boyd *Shape-O-Matic* compacting press puts air to work to reduce the labor, guesswork and *scrap* common to hand pressed shapes. You use a minimum of moisture and set direct to the kiln car. Most important, Shape-O-Matic is designed to handle *any* refractory material. In-plant experience has shown that densities are possible which approach that achieved on a power press.

If you're hand molding . . . or tying up high production power presses for short runs on special shapes, it will pay you to investigate how the new Boyd Shape-O-Matic can quickly pay its way in your plant. *Write for specifications.*

BOYD POWER PRESS

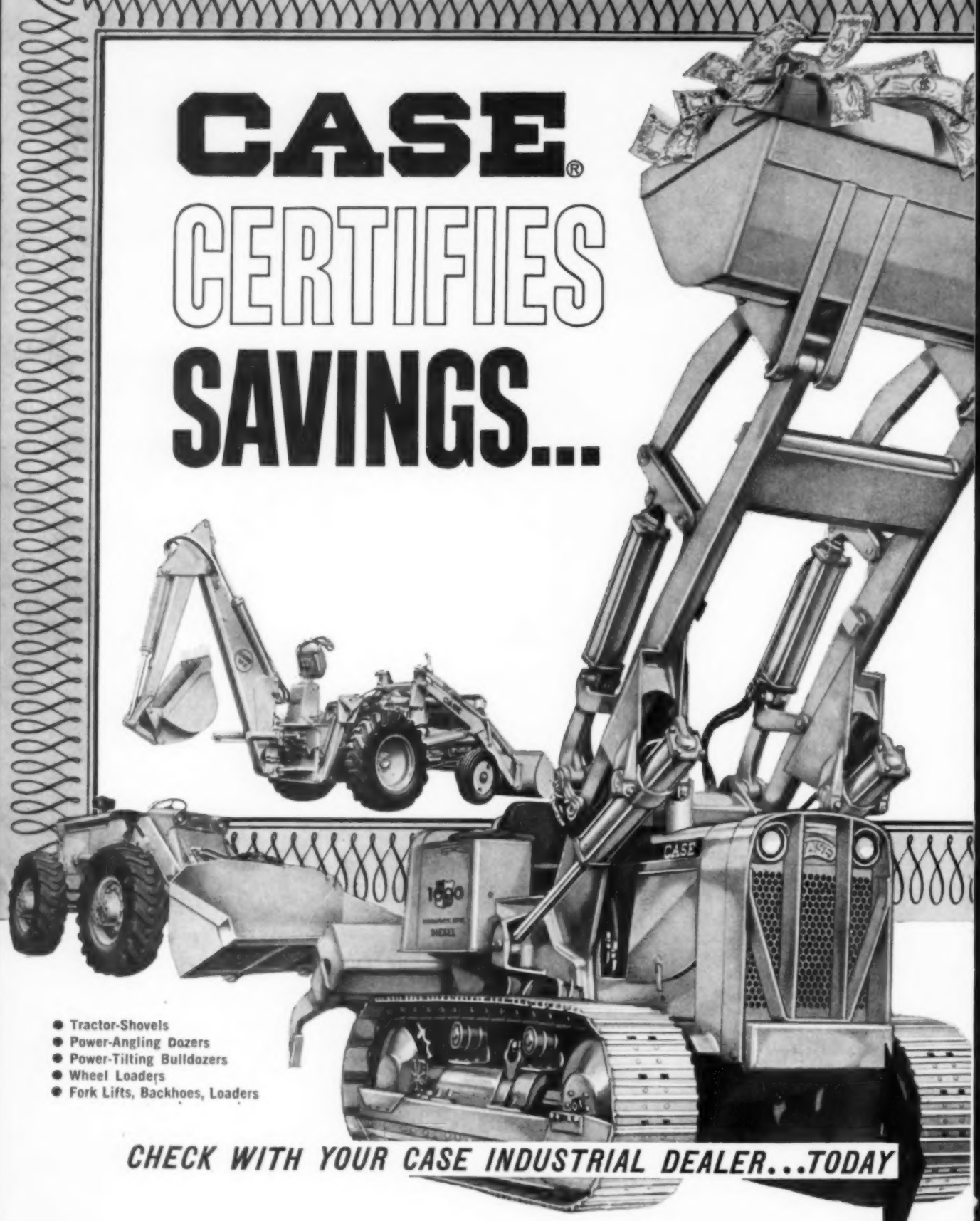
CHISHOLM, BOYD & WHITE COMPANY 1060

A Subsidiary of Wehr Steel Company

610 W. 57th STREET • CHICAGO 21, ILLINOIS

CASE®

CERTIFIES SAVINGS...



- Tractor-Shovels
- Power-Angling Dozers
- Power-Tilting Bulldozers
- Wheel Loaders
- Fork Lifts, Backhoes, Loaders

CHECK WITH YOUR CASE INDUSTRIAL DEALER...TODAY

...ON INITIAL PURCHASE PRICE!

The savings are certified to be as represented — $200, $500, $1000, up to $2000 on some models.

Price alone doesn't justify the buying of a piece of equipment. But *these* are machines with double-barrelled savings... big savings in initial cost PLUS money-making performance that pays dividends every day they work for you.

You'll find the machine that's just right for you in this seasonal clearance sale IF you act now. CASE CRAWLERS with exclusive Terramatic® Transmissions that speed up the pace of production and insure a better margin of profit on close-bid jobs. WHEEL TRACTORS with torque converter drive and an unequaled selection of Case-built backhoes, loaders, fork lifts. WHEEL LOADERS with safety-engineered balanced design that eliminates bucking, nose-diving and side-sway.

You pick the machine . . . and your Case Industrial dealer will *prove* its money-making ability in an on-the-job demonstration. Quote you the deal of a lifetime too... all at no obligation. Call him now! J. I. Case Company, Racine, Wisconsin.

A DEMONSTRATION

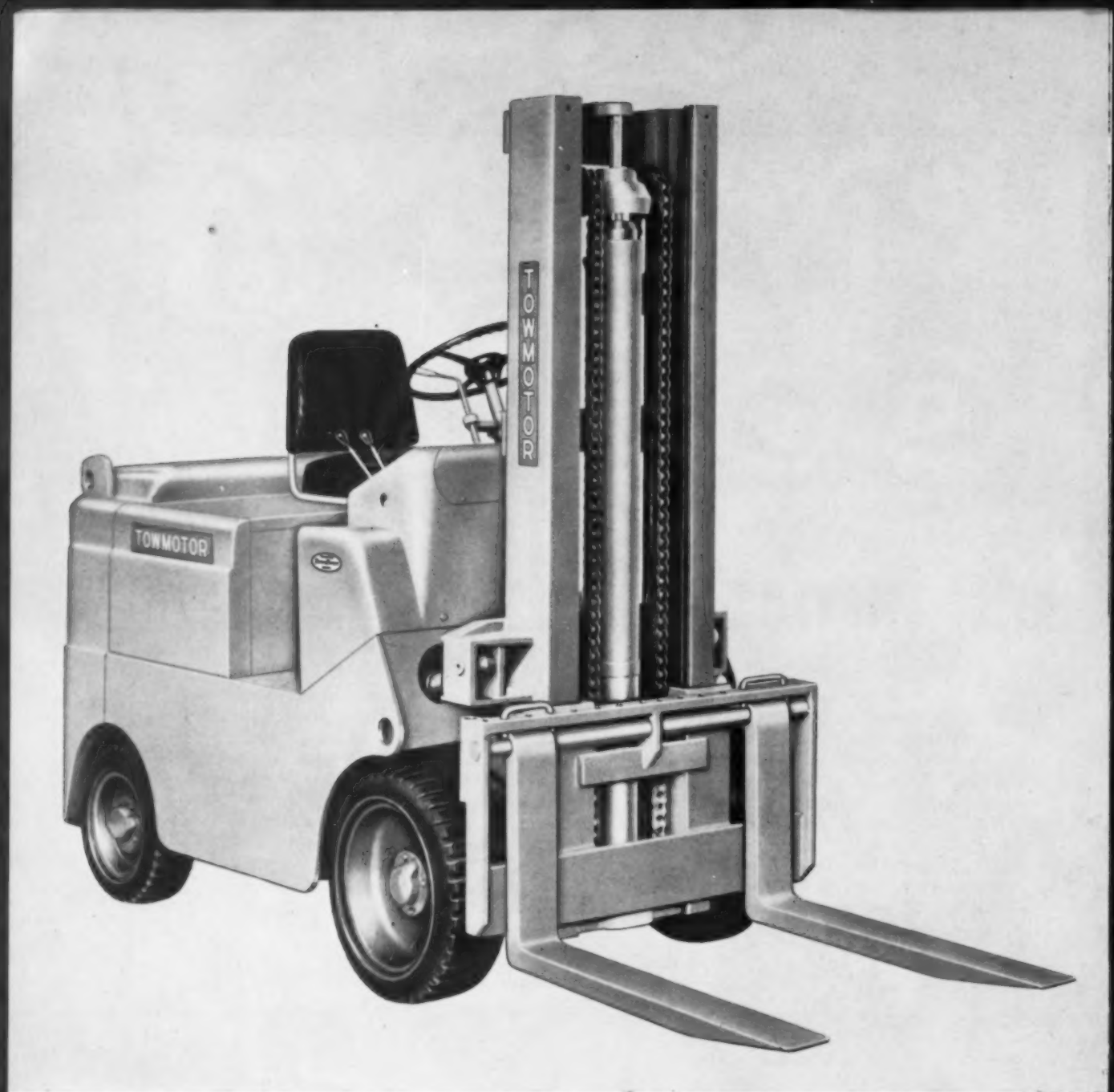
will show you how

CASE

Industrial Equipment Keeps your

PROFITS ROLLING IN!

Circle Service No. 27



Quick, easy access to entire engine compartment is a significant feature of new Towmotor "Pace-Maker" Series fork lift trucks (above), with load capacities up to 12,000 pounds. Tilt-back seat, hinged hood, slip-socketed panels expose service parts in 30 seconds without tools.

TOWMOTOR'S ON THE MOVE

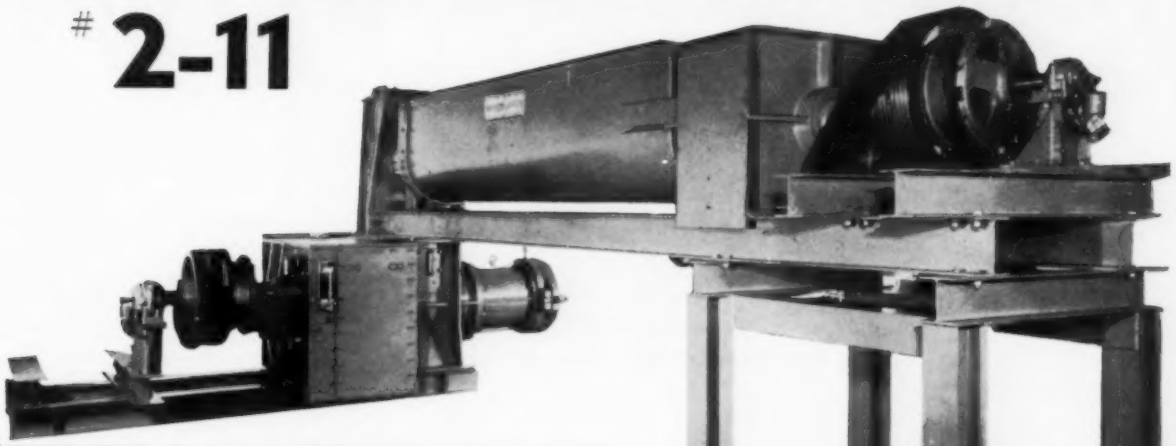
—setting the pace with good functional design, plenty of power, unusual agility! Integrating frame, body, engine, pumps and lift components for most effective mass-handling. Introducing new advances in centralized control, full vision seating, fatigue-free steering. Keep moving with Towmotor fork lift trucks—made only by TOWMOTOR CORPORATION, CLEVELAND 12, OHIO.

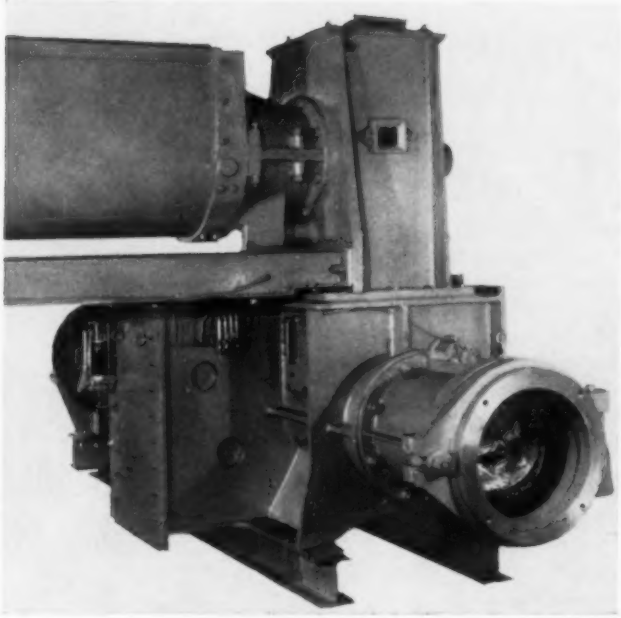
Circle Service No. 29

TOWMOTOR
THE ONE-MAN-GANG ®

CHAMBERS AUGER MACHINE

2-11





RIGHT-ANGLE or IN-LINE

- Dual drive with remote control Fawick Clutches.
- Compact one-piece gear frame-vacuum case. Rigid, short, high tensile-strength shafting. Anti-friction bearings throughout.
- 28" x 12' Pug Mill with options of 34" or twin tub pug mill suitable for vacuum pugging without added height requirements.
- Double gear reductions for each unit. High-speed motors and compact, efficient drives. Centralized lubrication.
- Chambers unbreakable, stress-relieved welded steel construction throughout.
- Proven efficient auger & die design. Inquire about our all-steel double-hung die holder arrangement.
- The same quality and attention to the details of design built into the Chambers #12 AC single-drive 18" Auger Machine (below) with capacities up to 300 HP.

12 AC

Write for further details today.

SERVING YOUR INDUSTRY FOR OVER 100 YEARS

CHAMBERS BROTHERS CO.

1857 1961

52nd & Media Streets · PHILADELPHIA 31, PA.

Circle Service No. 28

Depletion Becomes Law!

On Tuesday, September 26, President Kennedy signed H.R. 7057, after it had been approved by the Senate. This climaxed the long and hard 10-year fight by the clay products industry for the granting of a depletion allowance to the producers of brick and tile, and refractory and fire clay. After signing by the President, the Bill had to be delivered to the Archives where it is recorded and a Public Law number is assigned. It then went to the Government Printing Office where copies are made available for public distribution.

As BRICK & CLAY RECORD goes to press, these copies have not yet been made available for distribution but the editors have asked the Structural Clay Products Institute to interpret the new law and state just what it means to the industry. Here is what it means to you, as a clay products producer:

1. *How Much is the depletion allowance under the new law?*

The rates are the same as under the previous law—five per cent for brick and tile clay and 15% for fire clay. The rate is applied to 50% of the selling price of the manufactured product, not to exceed $12.50 per ton of clay used in manufacturing such products.

2. *What effect does this have on the Cannelton case?*

The new law determines the depletion allowance for each type of clay regardless of the opinion of the Cannelton case.

3. *To what tax years is the new law applicable?*

Taxpayers can *elect* to use this law for all "open" tax years prior to 1961 and back to 1951, when brick and tile clay was first granted a depletion allowance.

4. *Who is affected by this new law—who can take advantage of it?*

All clay products manufacturers who have open tax years prior to 1961. Clay products manufacturers who desire to take advantage of this law must *elect* to do so within 60 *days* of the date the Internal Revenue Service publishes regulations in the Federal Register.

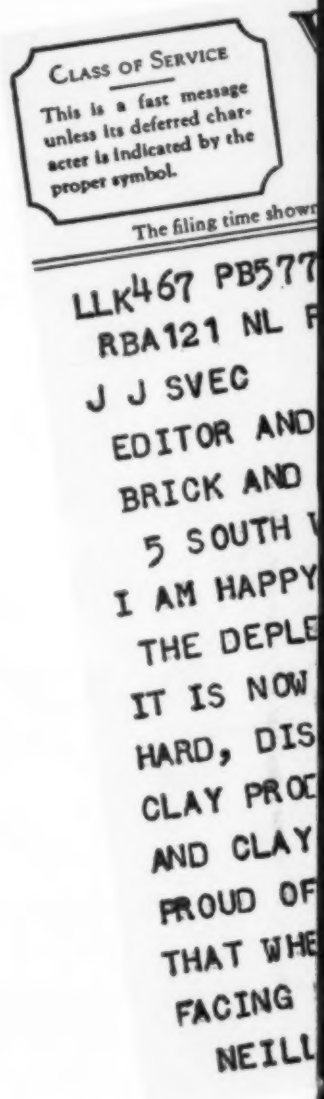
5. *With the new law in effect, what is the position of fire clay now?*

Manufacturers of fire clay now apply a 15% rate to 50% of the selling price of the finished products, not to exceed $12.50 per ton.

Notice that in the answers to questions 3 and 4, the idea of *electing* to take advantage of the law and then doing it promptly—with 60 *days*—is a vital part of the application of the law.

Many Accolades

Many persons have contributed to the hard work which went into the ultimate signing of the bill and they should all receive personal credit for their accomplishments: Kenneth Dunwody, Cherokee Brick & Tile Co., Macon, Ga., whose efforts brought about the original inception of the depletion allowance; Thomas Somerville, Thomas Somerville Co., Wash-



Neill Boldrick

Douglas Whitlock

ington, D. C., also for his early efforts; Edwin H. Davis, General Hocking Brick Co., Logan, Ohio, along with Edward Clemens, Cannelton Sewer Pipe Co., Cannelton, Ind. No attempt will be made to name everyone who has worked hard on this project because omissions are almost inevitable, but all of them have richly merited the industry's approbation.

A special debt of gratitude is owed Douglas Whitlock, board chairman of the Structural Clay Products Institute, and Neill Boldrick, chairman of the Depletion Committee of SCPI, for their vigorous and thorough efforts in seeing this action through, from its initial conception up to the signing of the bill. And finally, the entire clay products industry itself has earned praise for the support it gave committee members when the chips were down. Without the combined strength of the clay producers, this legislation would never have become law.

Kept Subject Alive

BRICK & CLAY RECORD has constantly kept this depletion subject alive because of its importance to the clay products industry and it is with particular pride that the editors are able to report the successful signing of the bill. But remember, it's up to you to take the next step. And do it right away. Review your own situation. You have to *elect* to use this new law and you will have to do it within 60 *days*.

(For more information on the background and history of the depletion bill, see BRICK & CLAY RECORD, September 1961, page 64).

WESTERN UNION

TELEGRAM

W. P. MARSHALL, PRESIDENT

SF-1201 (4-60)

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

HRL

in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

M 1961 SEP 27 PM 6 24

D RB WASHINGTON DC 27

PUBLISHER
CLAY RECORD
ABASH AVE CHGO
TO REPORT THAT PRESIDENT KENNEDY SIGNED HR 7057
TION BILL, ON TUESDAY, SEPTEMBER TWENTY SIXTH AND
THE LAW OF THE LAND. THIS CULMINATES TEN YEARS OF
CIPLINED WORK ON THE PART OF THE ENTIRE STRUCTURAL
UCTS INDUSTRY, INCLUDING THE LOYAL SUPPORT OF BRICK
RECORD. OUR INDUSTRY SHOULD NOT ONLY BE EXTREMELY
THIS GREAT COOPERATIVE EFFORT, BUT SHOULD ALSO LEARN
N WE COMBINE ALL OF OUR FORCES, WE CAN SOLVE ANY PROBLEM
US SINCERELY
. BOLDRICK CHAIRMAN STRUCTURAL CLAY PRODUCTS DEPLETION COMMITTEE.

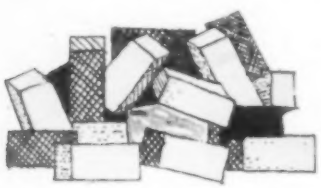
Here's how Brick & Clay Record received the news.

Let's Take A Close Look

The very fact that over 70% of the total brick being shipped in the United States goes into residential construction would seem to indicate that the brick industry has its sights zeroed in on that portion of the vast construction market. And coupled with the fact that the Bureau of Building Research predicts 1,330,000 new housing starts in 1962 would seem to indicate that the industry can look forward to a good year coming up.

But let's look at this market more carefully.

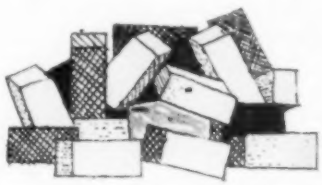
Of these 1,330,000 new housing starts, indications are that many of them will be in multi-family dwellings, with a probable decrease in the start of single-family units. In the Chicago area, for instance, high-rise apartment buildings are going up at the highest rate since July, 1950, while single family residences



are down 38%. According to the F. W. Dodge Corp., the nationwide trend is running in the same direction, with contracts for apartment projects rising a dramatic 30 percent, while single family residences are down 5 percent. How does the brick industry tend to cope with this trend which is taking place in our nation?

First of all, here lies an opportunity for our industry to make some gains by capitalizing on one of the products of research which seems to be gaining favor in all types of construction today, and that is the building panel. The "SCR building panel" is the answer of the brick industry to those builders and architects who prefer panel-type construction in high-rise buildings. The panel has been successfully used in the construction of a small residence and a small industrial building and just recently has been used in its first major commercial application. Preliminary cost figures indicate that this application of brick panels cost less than any other type of thin non-structural panel available today. Hence, the brick industry is now in a position to compete with other types of material for this type construction and every effort should be made to get our share of this market.

Next, don't overlook another product of research, the "SCR Masonry Process" for both single and multi-story buildings. It is a method which has been proven of getting brick in the wall cheaper and better than formerly and certainly is a worthwhile method for increasing business. The "SCR Masonry Process" has already been recognized by locals in more than 175 cities in the United States and with early usage it wouldn't take long for everyone to realize that here is an opportunity for increased masonry work for the manufacturer, contractor and bricklayer. If we are going to maintain our shipments of 70% of our production to the residential market,



we will have to use this method with our products, not only push it on a national scale but more so on the local scale.

Let's look at the remaining 30% of the production which goes into commercial construction. There are definitely more competitive products in the non-residential market and to convert this market will be a more complex task. According to Dodge, commercial building contracts are up 7% over a year ago and every attempt should be made to capture some of this lucative market.

The same conditions apply here as to the residential market. Good preliminary usage of both the SCR Panel, and the SCR Masonry Process, could mean more clay products being used in this type of construction. But are we bearing upon the right people? In the past, we have

What the Industry Must Stress in 1962

1. Apartment building boom and need for panel construction to get a proper share for brick.
2. Greater opportunity in bricklaying to offset the extreme rise in building costs of masonry.
3. A tight single family dwelling market and a need to spread the use of the "SCR Masonry Process" to get a greater share of the business.
4. Push panel for nonresidential construction.
5. Really jump into the urban renewal market; it's a gold mine and brick fits the project best as a building material.

At Our Market

been selling to the public and trying to please the bricklayer. It's about time we started on the contractor himself to show him how he can actually save money. If there is any possibility of the contractor saving money, he will certainly give anything a try and here's where we have got to start and do a better job.

Whether the concern is for the design and specifications for a given building, or for the use or lack of use of a particular clay product in a number of buildings, the basic steps of investigation, diagnosis, and corrective action apply. If they are pursued and combined with creative thinking and selling, then the results should soon be seen in the architecture of your city.

Urban Renewal

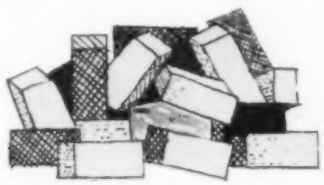
There is a third—and most important—chance for the brick industry to really get out and do a selling job for themselves and here is urban renewal. Why is it that the industry shows a continued complacency towards this type of construction? This is the most challenging development in the housing market today . . . a development that could mean billions of dollars of new

business for us in the years ahead.

Let's look at this market more carefully.

First—What are we talking about? At the present time we are talking of only one market—housing. This is not the housing which we have become accustomed to in the last few years however. This is a housing which will make the best possible use of the land available in towns and cities of all sizes. This is housing that will afford more privacy to its occupants while living closer to their neighbors. This is housing that can stop our head long rush toward the perpetuation of old sums and the erection of new ones.

Secondly, how does this tie in with urban renewal? Most cities have some of their worst blight problems surrounding their downtown areas. In addition, many cities are having a definite problem with the "drying



up" of their downtown shopping areas due to competition from shopping centers. It is obvious that if these apartment type units could be constructed in the areas immediately surrounding the downtown areas it would accomplish two things: (1) Renew and revitalize these highly valuable properties, thus providing the city with more taxes and (2) revitalize the downtown stores by, in reality, making them a shopping center for the new families who can now live within *walking* distance.

Third, does this type of housing *have* to tie-in with urban renewal? Most decidedly not. There are many newer areas, particularly in the larger cities where this type of housing would be extremely practical—and it becomes more practical as the population increases and land becomes more scarce.

Row Housing?

Fourth, what type of housing are we really talking about? We are talking about basically the type of housing known as row housing *but* with a few differences. Most importantly, each unit is to a great degree individually designed. The facades are all different, thus providing the occupants with a feeling of *individuality* and pride of ownership. There are privacy walls on the street, in the back, or all the way around. Some units are two stories in height, some are one story, while some might even have the living quarters basically upstairs with patios occupying most of the space below. There is space for small gardens and lawns.

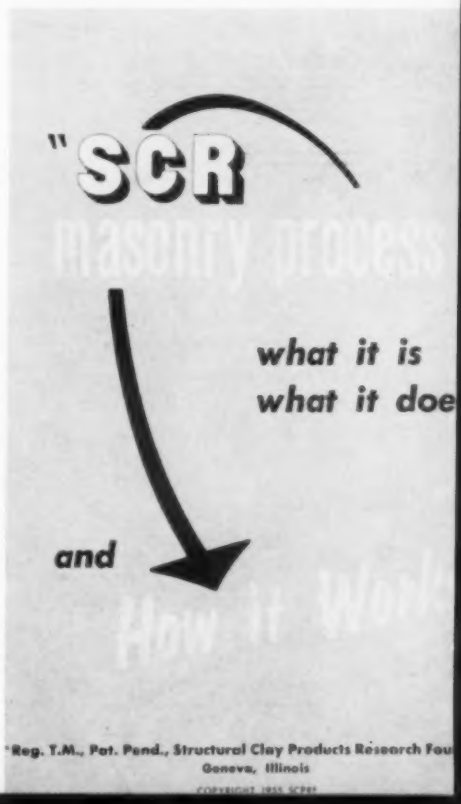
The units might be only 20 feet in width, thus making maximum use of the land available—but the units would not seem cramped due to their design. This type of unit should, of necessity, use a fire proof material, not merely a fire resistant one. It should, also of necessity, use materials with a minimum of maintenance. It should also be constructed of a material which is highly flexible so as to make it possible to provide individuality.

One material meets all of these demands—BRICK!

Fifth, will everybody want this type of home? Of course not. Many families, in all probabilities a majority, will still prefer a large yard and as much open space as possible. This is particularly true of families with growing children.

The housing we are talking about is more ideally suited for older

(*Continued on page* 70)



This is the book on the SCR Masonry Process, what it is, what it does, how it works. Published by SCPRF.

*Reg. T.M., Pat. Pend., Structural Clay Products Research Fou
Geneva, Illinois
COPYRIGHT 1955 SCPRF

PROGRAM

Pre-Convention Activities

Saturday, November 4

10:00 a.m.—1960-61 SCPI Board of Directors Meeting.

Sunday, November 5

9:00 a.m.—Registration

2:00 p.m.—National Association of Distributors & Dealers of Structural Clay Products (NADD) Board of Directors Meeting.

The Convention

Monday, November 6

10:00 a.m.—Paul B. Belden, Jr., President, SCPI
Election of SCPI and Structural Clay Products Research Foundation Boards of Directors.
A. C. Frisk, Chairman, Structural Clay Products Research Foundation.

1:00 p.m.—Luncheon Meeting—Dr. Clifford F. Rassweiler, Vice President for Research and Development, Johns-Manville Corporation, speaker.

2:30 p.m.—NADD Annual Meeting. "Windowless Schools" talk by Rhees Burket, AIA, Washington, D. C. architect.

8:00 p.m.—1961-62 SCPI Board of Directors meeting and election of officers.

Tuesday, November 7

8:00 a.m.—1961-62 SCPRF Board of Management meeting and election of officers.

10:00 a.m.—SCPI 1961-62 Promotion Program
John E. Clark, SCPI Promotion Director.

10:30 a.m.—Preview of 1961-62 Architectural Informational Meetings.

11:00 a.m.—Clay Masonry Family Fallout Shelter Program

11:30 a.m.—"Insulated Cavity Walls"—Daniel J. Boone, Vice President, Zonolite Company.

12:00 p.m.—"Research—Your Sales Tool."

12:15 p.m.—Convention Summary—Douglas Whitlock, SCPI Chairman of the Board and General Counsel.

12:45 p.m.—Adjournment.

6:30 p.m.—President's Reception.

7:30 p.m.—Convention Banquet and Entertainment with TV and Broadway baritone star Jack Russell, Broadway singer Lori Wilson and Alan Black, harmonica virtuoso.

Wednesday, November 8

Open for individual activity.

Post-Convention Tour to Williamsburg, Virginia.

Research Tops

Industry Research Seen As Key

Industry research will highlight the 1961 Annual Convention of the Structural Clay Products Institute as brick, structural tile and architectural terra cotta makers from across the nation gather at the Shoreham Hotel in Washington, D.C., November 6-8.

A bright future through research is on the horizon as the structural clay products industry focuses its attention on the expanding markets of the 1960's.

The Structural Clay Products Research Foundation slogan, "New Frontiers with Structural Ceramics," will set the keynote of the 1961 Convention. Improvements on existing products and methods and new product development will be thoroughly discussed as the industry explores the direction in which it is going and how dynamic research will help it reach that goal, SCPI Board Chairman Douglas Whitlock reports.

Authority on Research

One of the most authoritative spokesmen for industry research in the nation today, Dr. Clifford F. Rassweiler, vice-president for research and development of Johns-Manville Corp., will make a major speech at a special luncheon meeting on Monday following the morning business session.

For 17 years, he was associated with the research program of the du Pont Corporation and, since 1941, has headed Johns-Manville's highly successful research activities. Under his leadership, the firm expanded its post-World War II research program to include the erection of the largest research center in the world devoted to building materials, insulations and allied industrial products.

Dr. Rassweiler has demonstrated that the same logical, analytical approach which the scientist uses in the development of new products can also be applied for getting them into practical production and sale.

The clay products industry's dynamic research pro-

A. C. Frisk
Chairman, Structural Clay Products Research Foundation

Paul B. Belden, Jr.,
President, Structural Clay Products Institute

SCPI Agenda

To Expanding Markets of '60's

gram will be discussed and documented by A. C. Frisk, Structural Clay Products Research Foundation Chairman and Robert B. Taylor, SCPRF Director.

Allied Industry Speakers

The industry's brick and tile makers' close professional working relationship with the architect is underscored with the appearance on the convention platform of Philip Will, Jr., FAIA, distinguished President of the American Institute of Architects.

The industry's close partner on the masonry team, the bricklayer, will be represented at the opening business session with a talk by President John J. Murphy of the Bricklayers, Masons & Plasterers' International Union. John H. Stewart, Past President of SCPI, will also address the brick and tile delegates prior to the convention luncheon.

The SCPI 1961-62 promotional program which is designed to go after and capture the construction market will be unveiled for the first time at the Tuesday session. Promotion Director John E. Clark and his staff will show the industry the tools which can do the job. A capsule presentation of the 1961-62 version of the highly successful architectural informational meetings will be on the agenda. A key part of this presentation will be the first showing anywhere of a new, exciting architectural film in the tradition of "Man and Masonry."

The election of new SCPI and SCPRF officers and boards are also part of the business program, Convention Director Joe Cermak reminds delegates.

At the end of Tuesday morning's session, SCPI Board Chairman Douglas Whitlock will present his traditional summary of the convention's activities.

During the three-day meeting the National Association of Distributors and Dealers of Structural Clay Products (NADD) will hold its annual meeting and elections as well as a board meeting.

Dr. C. F. Rassweiler
Vice-President, R&D
Johns-Manville Corp.

J. J. Murphy, President
Bricklayers, Masons & Plasterers'
International Union

Special Convention Activities

A number of special activities have been scheduled for the ladies at the SCPI Convention. Here is a partial list of the goings-on.

Monday, November 6

9:00 a.m.—Ladies' tour of Freer Gallery of Art and the National Gallery of Art.

1:00 p.m.—Ladies' luncheon features outstanding entertainer and speaker Cathy Bauby.

2:30 p.m.—Tour for ladies and gentlemen including visit to Lincoln and Jefferson Memorials, U.S. Capitol and Shrine of the Immaculate Conception.

Tuesday, November 7

9:00 a.m.—Ladies' tour of the White House and Embassy Row with tea at one of the embassies.

2:00 p.m.—Tour for ladies and gentlemen including visit to historic Georgetown, Arlington National Cemetery, Lee Mansion, Alexandria and Mount Vernon.

Other activities will be announced at the convention.

A post-convention tour to historic Williamsburg is planned

Wednesday, November 8

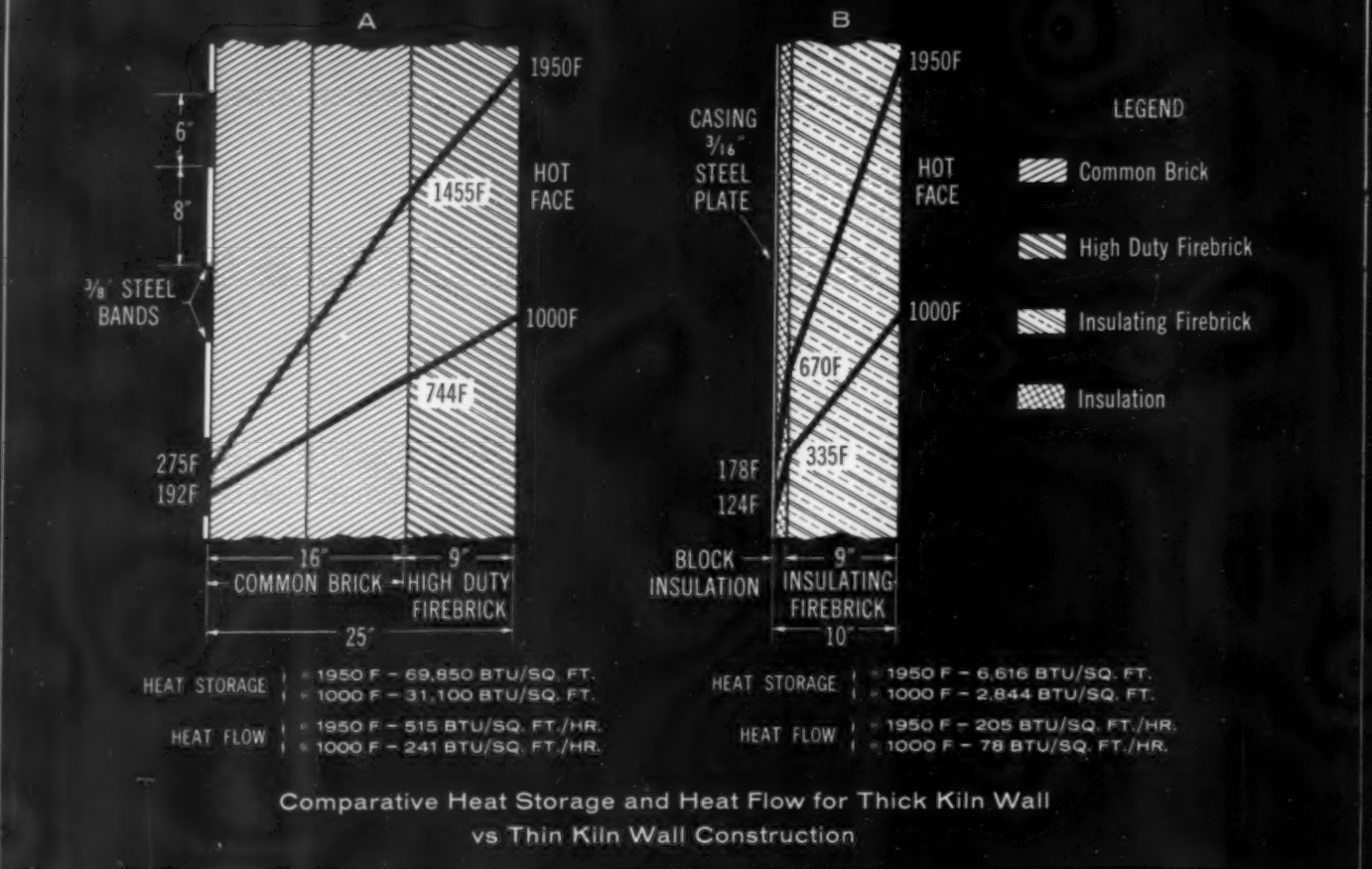
9:00 a.m.—Begin a 2-day deluxe tour of colonial Virginia and fabled Williamsburg departing from the Shoreham Hotel for Bull Run and Fredericksburg. Here, a visit to Kenmore, home of George Washington's sister, Betty, where tea and gingerbread will be served, is planned. Next stops are the birthplaces of George Washington, Wakefield Plantation, and Robert E. Lee, Stratford Hall. Lunch will be provided. Next is a lectured tour of Yorktown, followed by cocktails and an authentic southern-styled dinner in Williamsburg.

Thursday, November 9

Morning—Tour of Williamsburg will include visit to the Governor's Palace, Capitol, Public Gallows and other historic attractions, followed by a buffet luncheon. Travel to Jamestown follows, with a visit to the replicas of the original fort and sailing ships. Return to Fredericksburg in the late afternoon.

6:30 p.m.—Dinner at the George Washington Inn.

10:00 p.m.—Proposed return to Shoreham Hotel.



Comparative Heat Storage and Heat Flow for Thick Kiln Wall vs Thin Kiln Wall Construction

FIGURE 1

A DESIGN THAT DELIVERS PROFITS

Modern, thin wall, insulating firebrick lined, steel cased kilns cut costs many ways. Here's how:

That sounds fine, but can I maintain an even kiln temperature while reducing total fuel input?

Yes, because an insulating firebrick lining possesses far greater sensitivity to temperature change. As a result, an IFB lined kiln provides faster response to changes in firing rate. Because of the low heat storage characteristics of an insulating firebrick lining, changes in the combustion rate are followed rapidly by changes in kiln temperature. The added heat input goes into the ware, not the wall. This rapid response means reduced firing time, less fuel consumed—more profitable operation.

You say that furnace output is increased also?

Yes. Taking the same example—comparing a 25" wall to a 10" wall in a typical 38' 2" radius kiln—the thin wall construction provides an additional 12.5% increase in floor area and offers increased kiln capacity and output.

What about the problem of culls? Does this design offer any improvement in product quality?

Another of the advantages of a steel cased B&W IFB lined kiln is tightness. A fully cased kiln provides a tight wall construction. There is no cold air leakage into the kiln—no cold spots in the kiln to adversely affect the ware under fire. A tight steel cased kiln permits the maintenance of a uniform temperature gradient from top to bottom of the kiln. The result is fewer burnovers, and increased profits.

I operate several periodics. Can you explain why cycle time is improved in IFB lined periodic type kilns?

The low heat storage properties of insulating firebrick reduce cycle time in periodic type kilns. The low quantity of heat stored by an insulating firebrick wall can be absorbed and dissipated much faster than the larger amount stored by a dense wall construction. This means that your kiln heats up and cools down faster. Our experience over the years has shown that you can reduce heating time from 10 to 20% with an insulating firebrick wall construction—and you can cool your kiln down as fast as the ware will permit.

With faster cooling, the kiln must be more comfortable to work in. Is this true?

Another benefit provided by the thin wall, insulating firebrick lined kiln is improved working condition. The faster cooling time made possible only with a lightweight B&W Insulating Firebrick lining means improved worker comfort—increased production—greater return for your labor dollar.

What are the basic economies of thin wall, steel cased kilns?

One of the most significant developments to come forth in the last 15 years in the structural clay products industry is the thin wall, steel cased, insulating firebrick lined kiln. Note the difference in wall thickness shown in Figure 1. Offering the combined savings of reduced capital investment and lower operating costs, this new design increases production and profits. Thin wall IFB lined kilns provide the following benefits to the kiln operator:

1. Reduced capital investment as installed

2. Reduced fuel costs

3. Faster response to changes in firing rate

4. Improved product quality

5. Reduced cycle time in periodic type kilns

6. Improved working conditions

The following discussion provides the answers to many of the questions B&W has been asked about the money-saving, profit-building potential of this design.

How can a thin wall insulating firebrick lined kiln reduce my capital outlay?

One of the most notable advantages of thin wall insulating firebrick lined kilns is the savings in total capital investment. Total capital investment is dependent on (1) material costs, and (2) construction costs. Let's examine both. Figure 2 gives a typical evaluation of the total capital outlay for both constructions. Note that this comparison does not include the additional savings in reduced foundation costs that result from the lower weight of the kiln.

While an evaluation of this type will vary from kiln to kiln, depending on such factors as plant location, source of supply, etc., you can see that total costs will favor the thin wall, steel cased IFB construction.

I notice that you keep emphasizing that this is a thin wall construction. Why?

In Figure 1, we have compared two wall constructions that might be found in typical kilns. In one construction—labeled "A"—are 9 inches of dense firebrick, backed up with two 8 inch courses of red or common brick—*a total wall thickness of 25 inches.* This type of construction requires the use of steel bands for sidewall support.

The steel cased, insulating firebrick lined kiln—construction "B"—has a 3/16 inch steel casing around the kiln for the full height of the sidewall. The lining is 9 inches of IFB, generally with a use limit of 2000F, backed up with 1 inch of block insulation or insulating refractory castable—*a total wall thickness of 10 inches.*

This difference in wall thickness means a 66% reduction in brick laying time, alone.

How can operating costs be reduced?

Another major advantage provided by the thin wall, insulating firebrick lined kiln is reduced fuel costs. As seen in Figure 1, the steel cased construction—construction "B"—provides a lower outside wall temperature for a given hot face condition than does construction "A"—and it is 15 inches thinner! There is only one reason why—the insulating firebrick lining. Insulating firebrick are light in weight—they conduct less heat. This light weight results from the porous structure of insulating firebrick—porosity designed and built into the brick. Each of the tiny pores in an insulating firebrick acts as a barrier to the flow of heat. In Figure 1, the IFB construction conducts less than half as much heat through the wall. The fuel you burn heats the kiln, not the atmosphere around the kiln. Instead of paying fuel bills to heat your yard, you pay only to heat the kiln.

Approximate Cost Analysis of Heavy Brick vs. Insulating Firebrick Kiln Wall Construction

MATERIAL	UNIT PRICE DELIVERED	PRICE—DOLLARS PER SQ. FT.	
		CASE A	CASE B
HIGH DUTY FIREBRICK.....	$150/M	$1.92	$ —
FACE BRICK.....	50/M	1.80	—
MORTAR (FIRECLAY).....	40/NT	.20	—
STEEL BANDS (INSTALLED).....	.....	1.98	—
2000° INSULATING FIREBRICK...	205/M	—	2.62
MORTAR (AIR SETTING).....	145/NT	—	.19
STEEL SHELL (INSTALLED).....	.....	—	1.95
1"-1600° BLOCK INSULATION (INSTALLED).....	.....	—	.58
LABOR.....	100/M	4.88	1.28
TOTALS		$10.78	$6.62

Case A—Walls=9" High Duty Firebrick +16" Facebrick Banded by ⅜" x 6" Steel Bands and Turn Buckles

Case B—Wall=9"-2000° Insulating Firebrick + 1"-1600° Block Insulation + 3/16" Steel Casing

FIGURE 2

That's fine, but are these fuel savings significant enough to worry about?

Definitely. Lightweight not only means lower heat flow—it also means lower heat storage. In Figure 1, the lightweight insulating firebrick lining of the steel cased kiln stores 90% less heat than the dense, heavy wall of construction "A" for a hot face condition of 1950F. This means that to bring the ware in your kiln to a given temperature, you burn less fuel. Why? Because you are putting up to 90% less heat in the walls! Scores of case history studies have proved that B&W Insulating Firebrick save an average of 20-25% in fuel costs.

For further information, write The Babcock & Wilcox Company, Refractories Division, 161 East 42nd Street, New York 17, N. Y.

R-834

B&W

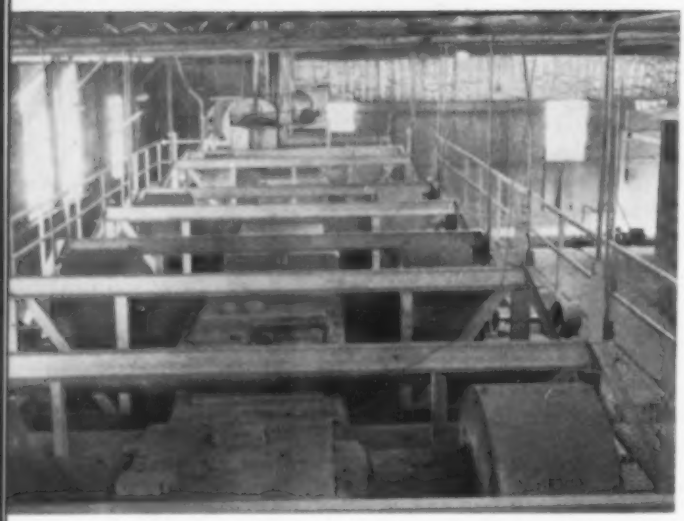
THE BABCOCK & WILCOX COMPANY

REFRACTORIES DIVISION

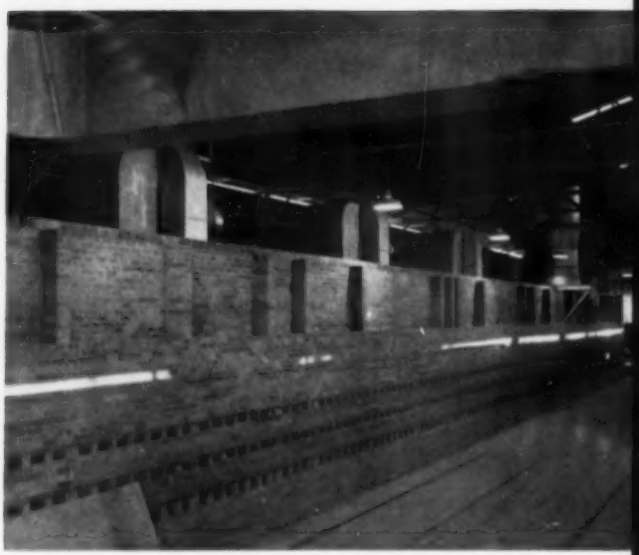
B&W Firebrick, Insulating Firebrick, Castables, Plastics and Mortars, Silicon Carbide, Ramming Mixes and Ceramic Fiber.

Representatives in Canada • REFRACTORIES ENGINEERING & SUPPLIES, LTD. Oakville, Montreal & Windsor

Circle Service No. 31



View from the top of the kiln shows the exterior of the recirculation and supplemental heat system on the kiln. The auxiliary exhaust and tie-in duct between kiln and dryer which utilizes kiln exhaust gases in the final stages of drying is shown in the background.

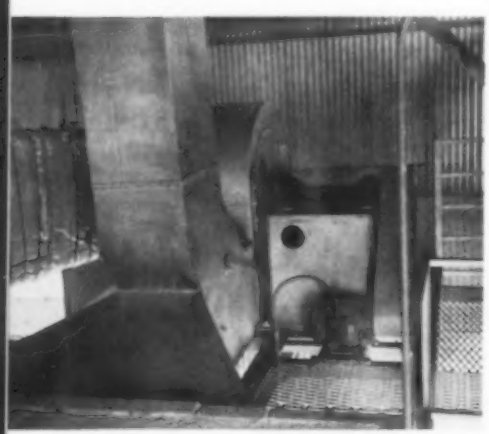


View of the 139-foot recirculation and humidity-controlled tunnel dryer shows the recirculating fans and the double wall construction for the future addition of a second tunnel.

Ten Fans Added as...

Tunnel Kiln Capacity Increased By 50% Through Recirculation

Marshall Brick Co. remodels kiln and adds dryer which increases production from 57 to 88 thousand brick per day through tunnel kiln. Recirculation in preheat section of kiln provided the answer. At the same time fuel costs dropped 15% and the quality of the brick improved.



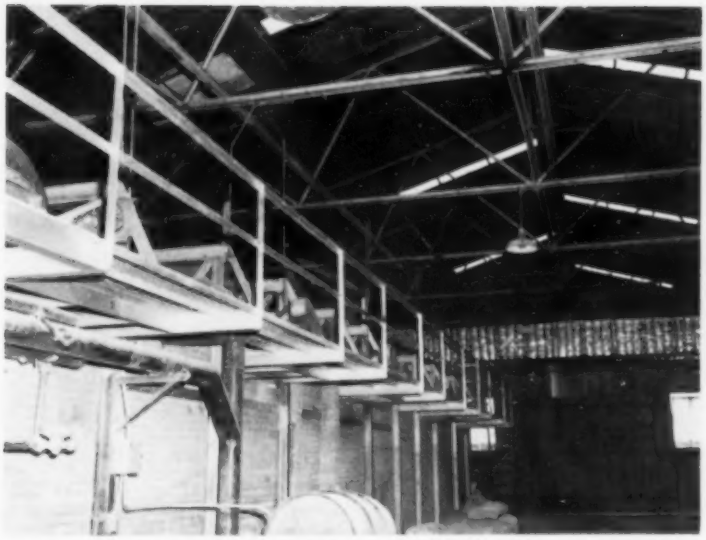
Closeup of the dual-purpose kiln exhaust and dryer supply fan from the drive side. Notice particularly the kiln supply inlet and the split discharge from the fan.

The tunnel kilns at Marshall, Texas, are really perking along these days! Originally built for 40,000 brick per day, it is now producing 88,000 brick every 24 hours, and producing them for 15% less fuel than it took to produce the former quantity. With the remodeling of the tunnel kiln completed by Carpenter Engineering Services of Warehouse Point, Conn., the Marshall Brick Co. has raised the former production rate which it was able to obtain from the 57,000 brick per day to this almost phenomenal rate.

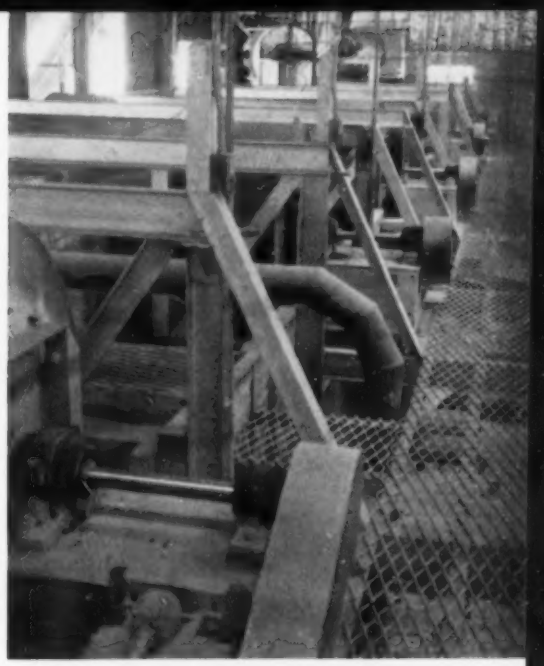
Recirculation has made the difference in this installation. Augmenting the ten additional fans which were added to the preheat portion of the kiln is a 139-foot controlled humidity tunnel dryer which also utilizes the Carpenter system of recirculation.

In the system formerly used by Marshall Brick Co. before the kiln was remodeled, brick were package-set on dryer cars, dried in tunnel dryers, and then reset by fork-lift trucks onto kiln cars. The setting time necessary to set the cars permitted the brick to cool to room temperature with the result that cold brick were being introduced into the tunnel kiln, at the same time introducing other problems, not only quantity-wise but quality-wise.

With the new system installed in the plant, the brick are now set and dried the same way, but after being set on the tunnel kiln cars, they go through the 15-car long dryer, which also acts as a preheater. After exiting from this pre-



View of the recirculating section of the tunnel kiln which shows the preheat zone as it looks from the floor of the kiln building.



View from the end of the catwalk at the first preheat burner zone looking toward the charging end of the kiln, shows the recirculation and booster heat units, including the fans and structural supports.

heater, they are then introduced into the tunnel kiln at a temperature of approximately 500°F.

The Marshall Brick Co. is currently making provision to eliminate the double handling of the brick by adding setting tracks to the machine-line which will enable direct-setting on the tunnel kiln cars from the brick machine. With this additional arrangement, the new preheater will then serve as the dryer for the green brick. The dryer-preheater has been designed so that a second tunnel can be added to it with a minimum of expenditure so that eventually a double-track dryer will be doing all the drying for the kiln.

Short Shutdown

All the exterior modification on the kiln took place while the kiln was being operated. A shutdown of only a few days was required when it was necessary to rebuild some of the interior portions of the kiln.

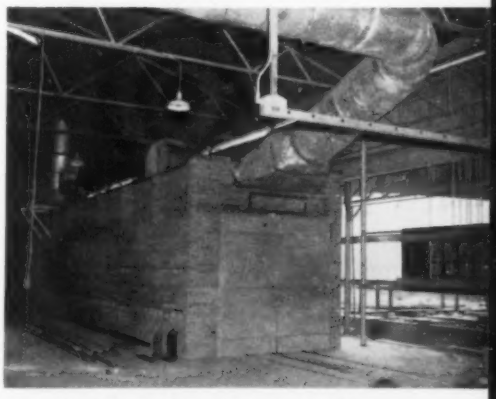
There are four recirculating fans in the new dryer-preheater, which was built parallel to the kiln and along side of it. Combined with the waste-heat supply fan and the exhaust fan, there are then a total of six separate zones in this 139-foot unit, of which four might be considered active recirculating zones. Waste heat is admitted to the preheater at a temperature of approximately 400°F and is boosted in the final stages of drying by the admission of kiln exhaust gases at 505°F. Damper controls have been provided to the kiln exhaust fan so that the flow of gases to the dryer-preheater can be individually controlled without disturbing the kiln balance. The kiln balance can also be controlled independently from the auxiliary unit.

Recirculation in Preheater

Recirculation in the preheater is through both sidewalls of the unit in through the setting and then up through the center of the tunnel. The dryer-preheater exhaust has been located approximately $\frac{1}{3}$ of the length of the unit away from the cold end.

In the 60-foot long preheat section of the kiln proper, 10 Robinson centrifugal fans have been installed, five on each side. Here, as in the dryer, the flow of air from the fans is in through each sidewall, through the setting and up through the center of the kiln. With the five recirculating zones and the exhaust zone, six definite and distinct zones have been provided in this 60-foot length. The kiln exhaust fan was relocated so that the kiln exhaust gases could be exhausted completely if desired, or if needed, a portion of these gases can be sent to the hot end of the dryer. Thus the kiln exhaust fan serves a dual purpose; that of exhausting the kiln gases, and also of being a secondary dryer supply fan.

It is interesting to note also, that the waste heat from the cooling section of the tunnel kiln is actually admitted into the cold end of the dryer-preheater, eliminating the problem of regain moisture which has often been discussed.



Waste heat from the cooling end of the tunnel kiln is admitted to the dryer at the charging end. The waste heat temperature approximates 400°F.

How Mixing Affects Ceramic Block Properties

By ROY B. MOFFITT
North Carolina State College

Introduction. In a previous paper, *Raw Material Cost of Ceramic Building Blocks*, it was briefly noted that the type and time of mixing appeared to have affected the physical properties of ceramic block formed and fired from the same composition. Previous pilot plant trials, production experience and laboratory data also indicated that this was true. It has always been a topic of conversation between structural clay plant operators that a ribbon type mixer was not as effective as a wet pan from the standpoint of forming properties of the mixed clay composition and the physical properties of the resulting fired ware. The data reported herein confirm that this is also true in the manufacture of ceramic blocks. Inasmuch as concrete block machinery is normally sold with a ribbon type mixer as an integral part of the forming machinery, it is apparent that a prospective ceramic block manufacturer would be immediately concerned if evidence could be obtained that would indicate the possibility of obtaining better physical properties in a ceramic block by the use of another kind of mixer other than ribbon type.

Procedure. A given volume of a ceramic block composition that was comprised of five parts by volume of a refractory phase aggregate, which had a P.C.E. (Pyrometric Cone Equivalent) of 15, and two parts by volume of a bonding phase aggregate, which had a P.C.E. of 5-6, was mixed with approximately 11% by weight of water and ¼% of the gross composition (aggregate and water) of a liquid ligin sulfonic organic binder with special additives. All of the aggregate used in this composition was essentially -8 Tyler Standard Mesh. Table I shows a typical particle size distribution for the aggregates used.

Table I—Typical Sieve Analysis of Ceramic Block Aggregate

Tyler Standard Mesh	% Retained
8	2.6
10	11.5
14	26.3
20	15.2
35	17.4
48	4.2
Pan	22.8

Two kinds of mixers, a Simpson mixer (two muller type) with inside and outside plows and a ribbon mixer were used to mix the ceramic block composition previously described. The time of mixing was originally sixty seconds, and this period was increased in intervals of sixty seconds to the point where the physical properties of the ceramic block formed and fired from such mixed composition either became optimum or stabilized, or the ware texture became slick. One-half of the mixing time was allocated for dry mixing and one-half in the wet state.

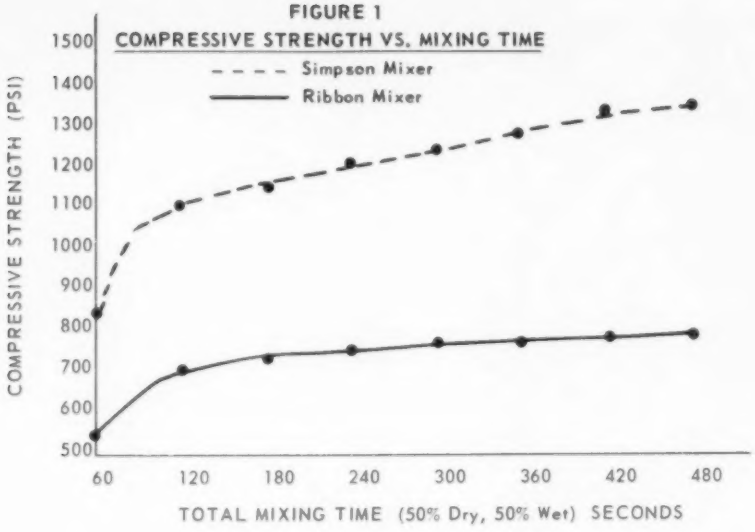
The ceramic block wet mixtures were then formed into green ware by the use of a single three-core mold George Presspac concrete block machine. Placing the ware in an atmospheric electric dryer over-night at 200° F, dried the green ceramic block to less than 1% moisture content, and the resulting dry ware was then fired in a gas fired laboratory kiln to Cone 5 in slightly less than eight hours. All of the fired ceramic block were then tested according to the procedure described in A.S.T.M. Designation C 140-39.

Results of Tests

Results. The two physical properties of utmost concern to ceramic block manufacturers are fired compressive strength and percent absorption. These two items should respectively be a minimum of 1000 psi and 15% (24 hour cold water soak) as required by the A.S.T.M. Designation for Concrete Block C 90-44. Simultaneous with these major items of concern are texture and shrinkage. All of the block that were formed and fired in the course of this work had a pleasing texture and a total linear shrinkage of less than 1.5%.

If a ceramic block absorption is approximately 20%, the percent moisture expansion as determined by the A.S.T.M. Designationn C 426-58

FIGURE 1



T, will be approximately 0.5% and this is in excess of normal autoclaved concrete block which is approximately 0.03%. If the ceramic block absorption is reduced to approximately 10% then the percent moisture expansion is usually 0.0005%, which far exceeds the moisture expansion percentage of currently reported autoclaved concrete block.

The data that shows the relationship between the fired compressive strength and the percent absorption is best shown by Figures 1 and 2. As previously stated, the data represented by these plots are from ceramic block formed and fired in the same manner from the same composition. Only the mixing action type and time are different.

Comments on Results

Discussion of Results. From a study of Figure 1, it is immediately evident that the fired ceramic block compressive strength is a definite function of the time and type of mixing action in a given composition. In general, the fired properties of ware which was formed and fired from the composition that was mixed by the use of a ribbon mixer indicated that there was little to be gained in the way of fired compressive strength if this particular type of mixing action was allowed to continue beyond 180 seconds (50% dry, 50% wet).

However, the fired compressive strength of the ware made from the composition mixed by the muller type action continued to increase as the total mixing time was lengthened. On the other hand, the ware formed from the composition mixed with the Simpson mixer (muller type mixer) showed small areas of slick surface at 480 seconds total mixing time. This was the reason for terminating the data at this point. There was no corresponding slick spots in the ware texture at 480 seconds total mixing time if the ribbon type mixer was used to mix the composition.

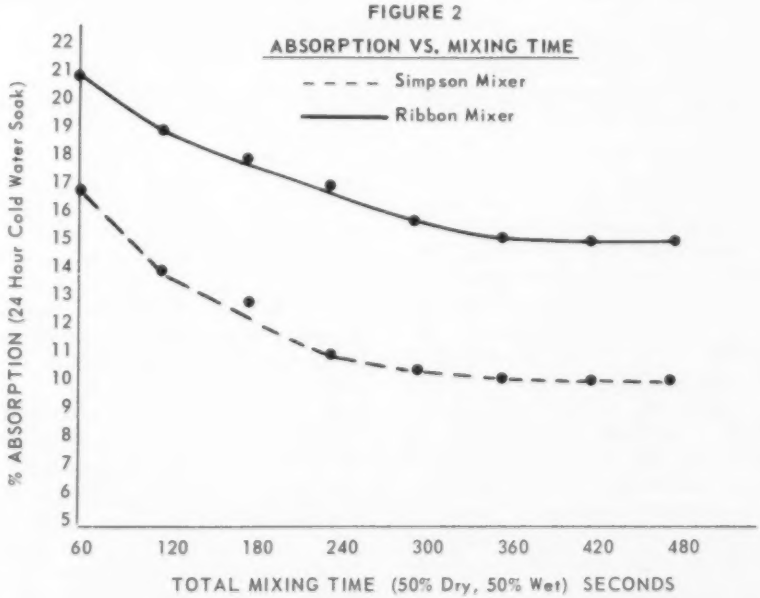
It must be noted that the fired compressive strength vs. mixing time and type correlation is at best comparative. The concrete block machine used in the laboratory did not make ceramic block in the green state that were as highly compacted as those formed with current commercial concrete block machinery. Everything else being equal (composition and firing schedule), the final compressive strength, but not necessarily absorption, seems to be a function of degree of green ware compaction. In the laboratory the high degree of green ware compaction possible with production type concrete block machinery was unattainable.

However, the highly effective kneading action of the muller type mixer dispersed and intermixed the components of the composition in such a manner that adequate (1000 psi) fired ware compressive strengths were obtained at and after seventy-five seconds of total mixing time of the composition. It must be understood that a composition mixed by a ribbon type mixer can be formed and fired so that the ware will have adequate fired compressive strengths if a high degree of green ware compaction, such as that obtained by current production machinery, is obtained.

Nevertheless, by employing a ribbon type mixer there is always the danger of not easily achieving the absorption specification in the fired ware even if a highly compacted green body is obtained during forming. The reason for this is currently not understood, but this phenomenon has been experienced in the labora-

(*Continued on page* 74)

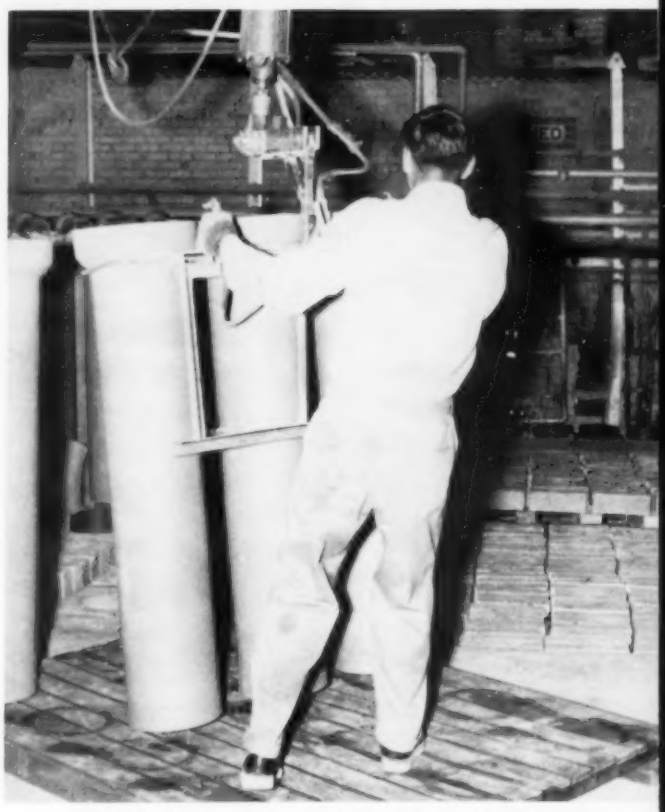
FIGURE 2



Hand-setting was a slow, fatiguing process at Denver Brick & Pipe Co.

Before ▲

After ►



Lift picks up 3'10" pipe easily at Denver Brick & Pipe Co.

Plant-Designed Lifters Save One Third Time

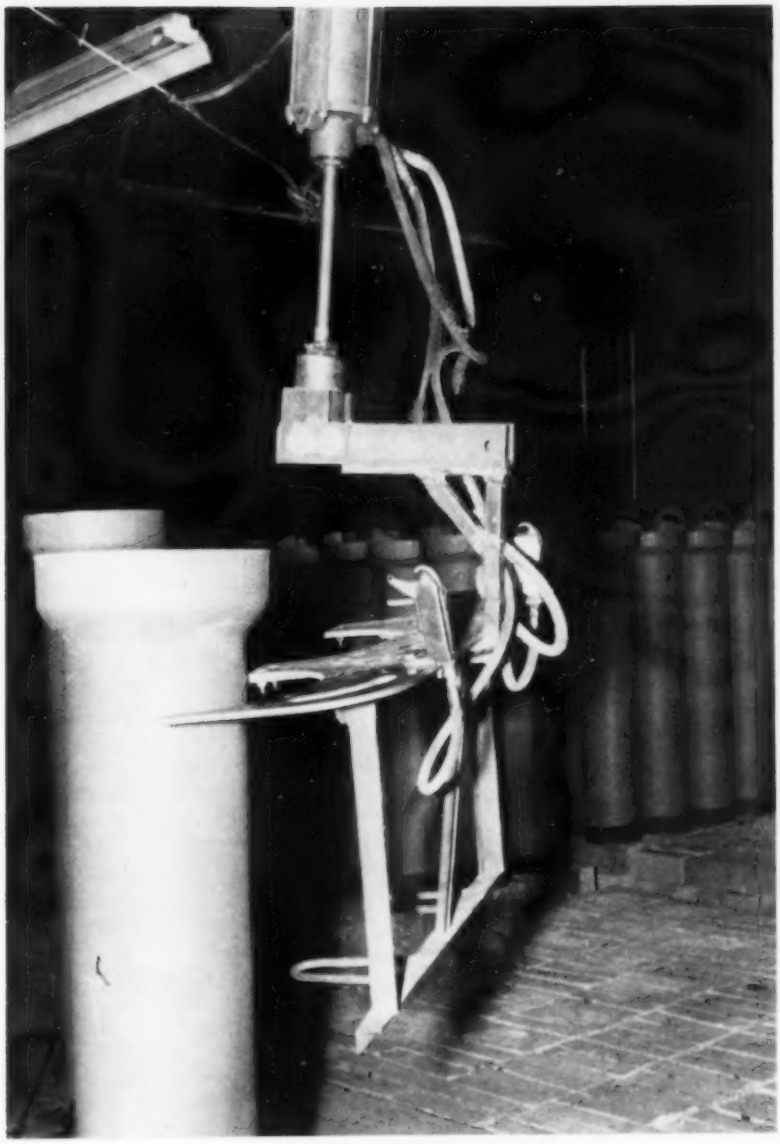
IN KILN CAR SETTING AND DRAWING

Eliminating two of the most objectionable factors in setting kiln cars of 4-foot pipe—shipping and slow, tedious labor—is the purpose of a pair of novel pneumatic "lift yokes" at Denver Brick and Pipe Co., Denver, Colo.

In use for a little under a year, the two pneumatic yoke units were developed by the engineering department, headed by Robert Thompson, for the company's 4-foot sewer pipe plant (soon to be augmented with an even larger 5-foot plant). The direct objective was a practical means of speeding up the two processes of setting 4-foot pipe in 12, 10, 8, and 4-inch diameters, on Denver Brick's 10-foot kiln cars, and at the same time doing away with the heavy amount of chipping which was playing havoc with production.

What was needed, according to Mr. Thompson, was a practical means of doing away with the heavy lifting which, of course, translated itself into slow operations, while at the same time, keeping pipes separated for a minimum amount of jarring impacts which create chips, cracks, and culls. Ever since completion, the kiln cars used in the sewer pipe plant's elongated Allied tunnel kiln had been set by hand, usually with one man lifting one length of pipe at a time. Where the big 12-inch and 10-inch pipe was concerned, this was a cumbersome load indeed, and one which was likely to mean wobbling or turning the pipe into tight interstices.

A combination of some leftover parts from other construction, some scrap metal, and some practical ingenuity has done away with all of



Half-moon cuts in the forward edge of the lifter plate slip under the neck of each pipe.

these objectionable factors for Denver Brick and Pipe Co. Making possible effortless, swift transfer of sewer pipe from one point to another are pneumatic lifts, built around 5-inch air cylinders, with a short 5-inch stroke, which swing on heavy cables, from a versatile moving superstructure, above both the setting, and drawing point, along the 2-track kiln-loading dock.

Almost Identical

The two lift units are almost identical, except, of course, that one is used for setting, the second for drawing, separated some forty feet at the respective points. To make possible easy spotting of the lift unit at any point, the lift cylinder swings by cable from a six-inch steel girder, 24 feet long, on two pulley wheels which allow the cylinder to move back and forth, parallel with the tracks, at any point over the twenty-four feet. Each end of the 24-foot rail is likewise mounted on flanged wheels, which permit a similarly long swing, on right-angle steel girders, the full width of the two tracks, plus around eight feet of dock. In other words, the cylinder, with its load of pipe, can move from the dock all the way across the tracks to the far side of the second track, a distance of some twenty-four feet, as well as up and down, parallel with the tracks over a twenty foot distance.

Heavy Aluminum Arm

Suspended below the cylinder is a heavy aluminum arm, cut by the Denver Brick and Pipe Company shop from three-eighth inch structural aluminum plate. Because of the variety of sizes manufactured in four-foot sewer pipe, Denver Brick and Pipe Company produced a similar variety of plates, which can accommodate anything from three 10-inch pipes, five 6-inch pipes, four 8-inch pipes, etc. Half-moon cuts in the forward edge of the steel plate simply slip under the neck of each pipe, gripping them securely while the air-operated cylinder lifts the load up a matter of six inches, after which it rolls forward or backwards, or sideways in either direction, as required, for spotting the pipe at one point, or palletting the pipe at the other. Normally, the yoke units are used most for setting and drawing three 8-inch pipes, or five 6-inch units. Other sizes, of course, are handled less often, but plates are ready for use. The plates are simply safety-bolted on the cradle below the cylinder, and remain rigidly level, even when the ponderous weight of three 8-inch pipes is being supported.

System Operation

As the system operates, pallets of 4-foot sewer pipe are brought in by a fork lift, and spotted alongside the kiln car setting point, on the dock, back some five feet from the edge of the dock. It requires one less man to transfer the entire pallet load of pipe to the kiln car, through lifting and setting three 8-inch pipes at a time, for example, and the work is carried out in approximately one-third less time. Chippage has been materially reduced, although it has not by any means been completely eliminated, according to Thompson. The lift operates swiftly enough, to pick up three pipes, and transfer them to the kiln car in approximately twenty-five seconds, as opposed to making three trips, with one pipe each, in approximately one minute—which is a very brisk pace.

(*Continued on page 76*)

Huber's first stripper is this diesel powered walker. Huber likes the mobility of this machine—which is also equipped with a 220-ft. boom and 9-yd. bucket.

Huber's latest Marion Type 7400 walking dragline, equipped with 220-ft. boom and 9-yd. bucket, is electrically powered. This machine is expected to produce 400 yds. per hour.

How Do You Mine Clay?

Scrapers, draglines both used in Huber's kaolin operations

Much the same as open pit coal or other non-ferrous mining, the major method of exposing Kaolin clay involves overburden stripping by one method or another. J. M. Huber Corporation uses both scraper and dragline methods in their Kaolin mines.

The high cost of the scraper method of moving overburden dictates the use of draglines whenever possible. By using two 9 yd. Marion Type 7400 walking draglines, Huber is able to remove the cover for 30 percent less than it would cost by using scrapers. The 220 ft. of boom used on these big walkers enables them to spoil material a good distance to the side of the cut.

Draglines Economical

Even when rehandling is necessary, it is often more economical to use the draglines. Only when a scraper haul of less than 3000 ft. is possible is it feasible to use this method of overburden removal. If the scraper must travel more than 3000 ft. to dump the spoil, it is usually more economical to rehandle with the dragline. When the draglines can spoil the overburden far enough away without rehandling they can operate at ⅔ the cost of the scrapers and are therefore naturally preferred.

The same figures and ratios will not necessarily apply to other locations but is possible that a similarity in operation might be worth a comparative examination of these methods of stripping.

At Huber's South Carolina pits, scrapers are used exclusively. Here they are limited to mining existing pits and these areas, similar to some copper and iron mines, cannot be refilled with spoil. The scrapers usually haul about a half to three-quarters of a mile to dump the spoil —much too far for a dragline.

At the company's mining area in central Georgia, the Marion draglines are able to do most of the stripping. Let's take a close look at this operation at Huber, Georgia.

Overburden in this section runs from eight or nine feet to a maximum of 80 ft. in depth. The company tries to maintain a ratio of no more than 5 yds. of overburden to each ton of marketable clay. Varied overburden runs from sand and soil to unuseable, low-quality clay. It overlies 10 to 25 ft. of good quality Kaolin clay.

As the processing plants at Huber blend several crudes in order to facilitate quality control of the finished product, the company mines from several pits at the same time. This requirement causes the mining operation to become somewhat unusual.

Several Pits Mined

The first step is the opening of a new property. One of the Type 7400 walkers opens a box cut about 150 to 200 ft. wide and 1500 to 2000 ft. long. Then the stripper moves to an entirely different pit, where possibly the box cut had been opened the year before and the exposed clay had just been removed. At this cut the dragline would take out an adjoining panel cut and spoil the waste materials in the original box cut. When finished with this cut it would most likely move to another pit to start all over again.

This may seem like a lot of moving around, especially for a 640-ton dragline, but as we said before, the special grades of clay must be com-

bined from several pit locations. To obtain the proper clay blends, production must be planned a full year in advance. Pits are plotted, haul roads planned, and the moves of the draglines outlined. Each dragline will be moved five or six times a year with distances ranging up to a mile.

Even with these long and frequent moves cutting into production time, the company maintains a good average output per scheduled operating hour. Taking time out for shift changes, maintenance, lunch breaks and the moving of the machines, the older Marion walker is still producing an average of 52 minutes out of every hour, day and night, 24 hrs. per day, seven days per week. These figures are for the diesel powered dragline purchased in 1954. The newest stripper is an electric powered 7400 that went into production just a few months ago. Based on Huber's preliminary reports, the newer Marion will be producing about 15 percent more than the old one with the cost of operation about ten percent less. The new 7400 is expected to produce 400 yds. per hr. at an average of about 7½c per cu. yd. for all operation, maintenance, wage and depreciation costs. The cost per yard as applied to the scraper operation averages about 12½c.

Maintenance

Detailed records and cost sheets are kept by mine superintendent, Ed Cockey, and his assistant, Grady Vandiver. The Marion walkers are subjected to regular periodic checks and inspection. The oilers complete a check sheet every hour, a more complete check sheet every four hours and a still more detailed sheet every eight hours. In addition to these sheets that are turned over to Cockey for each shift's operation, there are more complete inspections made at 80 hrs., 500 hrs., and 1000 hrs.

The keeping of these records, along with the operating hours and cycles performed by the big draglines start to form a pattern that tells when parts should be replaced, what the expected life of wire rope should be, when bucket teeth should be replaced, etc. For instance, it has been determined that the ends of the drag rope should be reversed when the rope is about 40 percent worn. When the drag rope has handled approximately 315,000 yds. they know it is due for replacement. The same methods are used with the hoist and other ropes. It has been determined that a hoist rope will last for about 750,000 yds.

It's the same story for bucket teeth, although the point life is quite variable. Teeth points are replaced after an average of 50,000 to 75,000 yds. Due to the varied nature of the overburden handled, they have occasionally had to replace points after 35,000 yds. while at other times the points have lasted for as much as 135,000 yds.

Before moving the big stripping equipment into a new pit area, J. A. Rogers, who is in charge of Huber's prospecting and exploration department, must determine exactly where the clay is, what properties it has, how thick it is and how much cover lies over the seam. This job is complicated by two factors. One is that several different types or grades of clay must always be available. The other is that production from all the pits must be computed a year in advance.

To obtain the proper clays in the anticipated amounts, Rogers' crew works from their geologic maps to find the most likely clay bearing area. Then a lease is obtained and the drillers come in to sample the area.

Test holes, about 400 ft. apart, are sunk on a grid system. If suitable clay deposits are found, additional test holes on 200-ft. centers are sunk to locate the approximate area of the clay seam. This seam is then further defined by test holes on 100-ft. centers. If the overburden is deep, even closer centers are used to pin-point the seam. Results of the core drilling and the analyzing of material enable the new areas to be opened on a scheduled basis. They uncover the area a year before that particular type of clay is needed for production.

Mining and Hauling

After the two big walking draglines have removed the overburden and are working at another pit, the loaders are moved in. Because of the types of clay needed, Huber often mines at four separate pits while the strippers are opening ad-

(Continued on page 77)

Left to right in photo are William (Bill) Gulledge, district sales manager for Marion; Grady Vandiver, assistant mine superintendent; Frank M. Gribble, general manager of Georgia operations for Huber's Clay Division, and Ed Cockey, mine superintendent.

Front-end loaders move mixture of raw clays from storage shed to feed hoppers to blend material fed to the plant.

Shipments are made in bag and bulk form. Bags are conveyed directly into rail cars.

The Pactainer System—

A New Concept In Shipping Brick by Rail

Interest in the concept of containerization as applied to the structural clay products industry is growing at a rapid rate.

The advantages of this system are assured because management and shippers are looking for more economical freight movement, similarly, shippers have long awaited and continued to strive for a method embodying a coordinated and integrated carrier system.

Containerization provides more economical transportation by eliminating the number of times goods must be handled and increasing the rapidity of each operation.

Provides Complete Operation

The Pactainer system as developed by American Truck Body Co. over the past seven years provides a complete operation from kiln sorting stations to delivery of wire on the job. This method has been developed to load or deliver directly to the job from freight cars, using mechanical equipment in lieu of manpower. As a result labor costs are lowered, damage to ware is reduced to a minimum, deliveries are speeded up, increased pay loads are provided, and overall costs are reduced.

Standard types of equipment, thoroughly job-tested, are used in the several phases of the system. Pack-Hauler units have been manufactured and have been in use for many years through-out the United States and Canada. Well engineered and properly constructed of quality materials, they are long-lasting and reliable assuring daily high volume results.

The flat cars are standard units as can be furnished by most all of the railroads. The decks are modified to receive the 3,000 capacity containers.

Containers are manufactured by American Truck Body Co. to fit as an innerliner in the Pack-Hauler body and as cargo containers while enroute on the flat cars. Fasteners or tie downs are furnished with the containers.

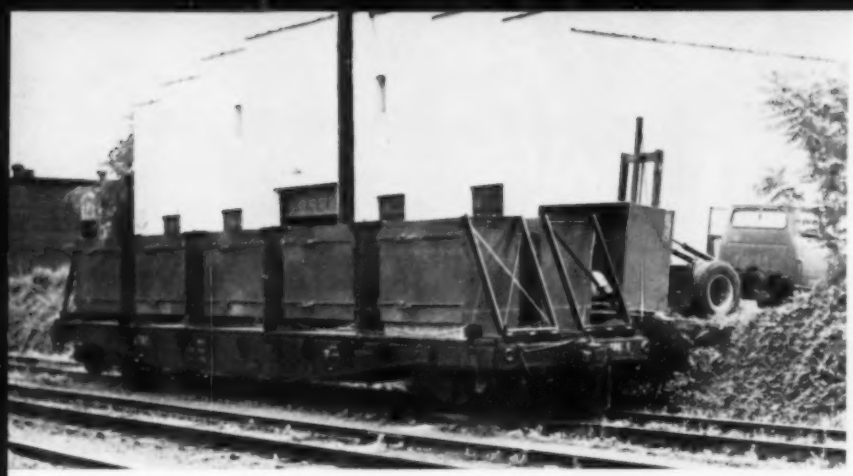
The container cars have been in use by railroads throughout the country for more than one hundred years. They are increasing in popularity because of their cost saving features.

Dockboards and loading and unloading docks are the only other items of equipment. These are standard items long in use by all companies loading or unloading carload shipments of their products.

Brick are hacked into cubes containing 3000 standard brick equivalents as they leave the kiln. They may be stacked at the sorting station or at the cooling track outside the kiln. Structural clay products manufacturers using Pack-Haulers for their present truck deliveries already use jigs or hacking forms made of wood or steel for building these cubes. The container may also be used as a jig or hacking form.

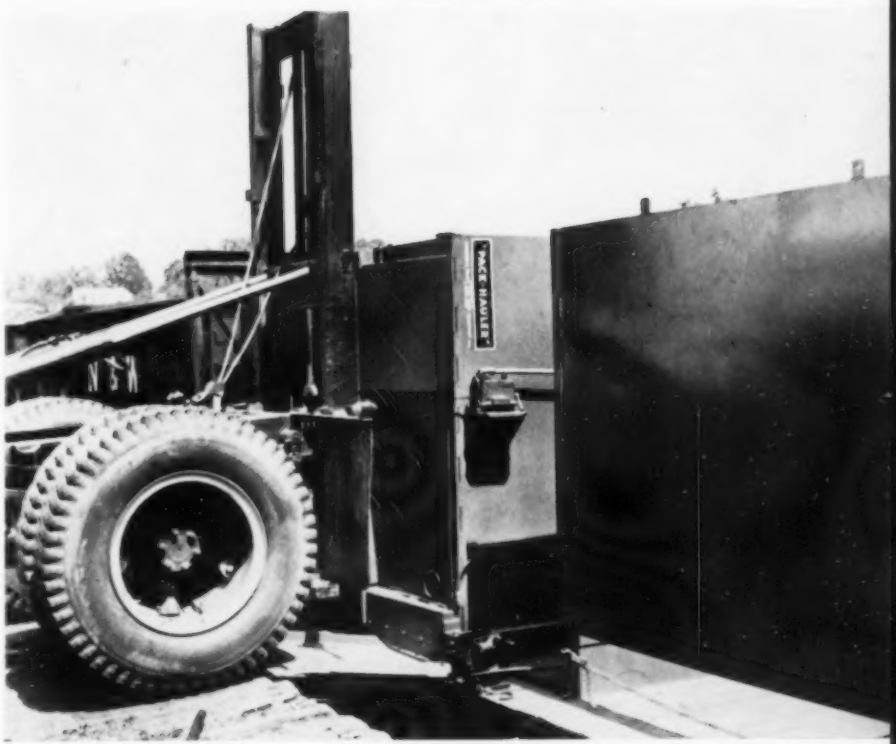
Advantages of the Pactainer Method

1. Finished ware is delivered from sorting station to car with minimum of product damage.
2. Three thousand capacity cubes provide stable, easily handled units.
3. Contained cubes provide true count for inventory or invoicing.
4. One time mechanical handling between kiln and car reduces in-plant hauling cost to a minimum.
5. Cars are quickly loaded—30,000 brick in one and one half hours.
6. Car preparation and dunnage cost is eliminated.
7. Cars are quickly unloaded—30,000 brick in one hour.
8. Dock side kept neat and clean at loading and unloading points to reduce accident hazards.
9. Pack-Haulers pick up entire cube and deliver to job without rehandling.
10. Lower freight rates.
11. Maximum payload capacity per car.
12. Low maintenance cost on all equipment.
13. Fewer trucks will be required to handle the same quantity of materials.



Left, as many as 10 standard Pack-Hauler units can be placed on a flat car whose deck is modified to receive the 3000 brick-capacity containers. 30,000 brick are then shipped to their destination.

Below, the entire truck with its load is backed into a predetermined position on the flat car, the loaded container is set down, and the truck returns to the plant to repeat the operation until the car is loaded.



If the cubes are made up using the standard type jig, the Pack-Hauler would carry the containers as an inner liner. The body is placed over the cube, the gates are closed, and the clamp bar is placed into position and clamped against the bottom of the cube. The unit then proceeds directly to the loading dock. The entire truck with load is backed into predetermined position on the car, the loaded container is set down, and the truck returns to the plant to repeat the operation until the car is completely loaded. The truck driver controls pick-up, in-transit and set-down operations.

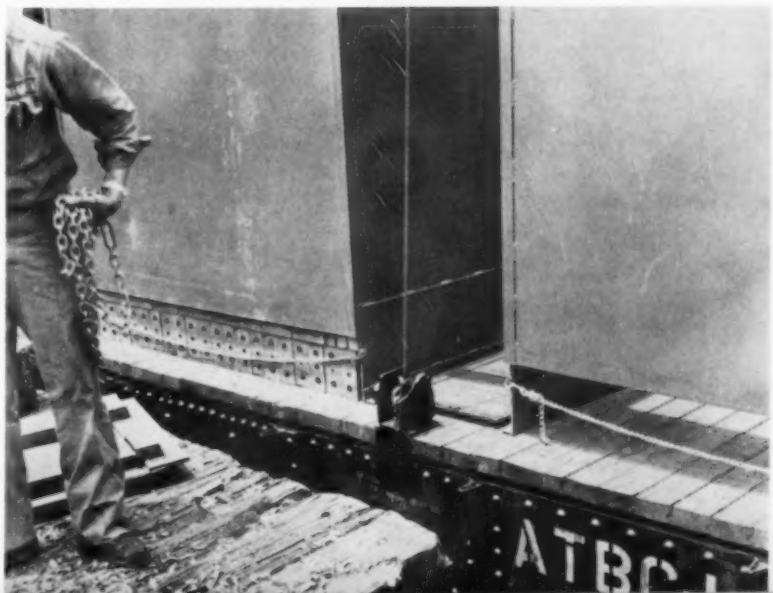
Ready for Shipment

After all containers are placed on the flat cars, the tie-downs are securely fastened in place by the truck operator and his helper and the car is ready for shipment.

When the car arrives at its unloading dock destination the tie-downs are unfastened by one laborer. The standard size Pack-Hauler backs onto the car, picks up the container and delivers the load to the storage yard or the job-site. Pick-up, delivery and unloading are performed by the truck operator. Cars may be loaded from either side but must be unloaded from the same side they were loaded.

Thirty thousand standard size brick may be transported on the special flat car. Assuming a distance of approximately 1500 feet from kiln to loading dock and from loading dock to storage yard, one Pack-

(Please turn page)



Right, after all containers are placed on the flat car, tie-downs are securely fastened in place by the truck operator and the car is ready for shipment.

Container cars have been in use by railroads throughout the country for many years. They are increasing in popularity because of their cost saving features. Shown is a close-up of a loaded container on a flat car.

Equipment Required

At Brick Manufacturing Plant

- Single Pack-Hauler - 3000 capacity Model C408568S - Wheel Base 142″ - CA 72″
- Loading Dock at car floor level with ramp from grade
- Dock size 12′ x 29′ minimum - larger size recommended
- Portable bridge or dockboard between dock and car - 18,000# capacity
- Tools for fastening
- Straw or cardboard strips are permissable
- Special 50′-6″ x 10′-6″ flat car with bulkheads, tie-downs, and spacers
- Truck turning radius 25′-6″

In Transit

- One - Flat car
- Ten - 3,000 standard brick capacity containers - 40″ x 84″ x 68″
- Necessary tie-down equipment

At Terminal Point

- Loading dock at car floor level with ramp from grade
- Dock size 12′ x 29′ minimum - prefer 12′ x 30′
- Portable bridge or dockboard between car and dock - 18,000# capacity
- Tools for unfastening
- Truck turning radius 25′-6″
- Single Pack-Hauler - 3000 capacity Model C408568S - Wheel Base 142″ CA - 72″
- Tandem Pack-Hauler may be used if loading dock is large enough to accommodate unit.

Labor Required

- At plant driver to operate Pack-Hauler, pick up containers and set in place on flat car.
- One laborer at plant to fasten tie-downs after containers are placed on car.
- At terminal driver to operate Pack-Hauler, pick up containers and deliver shipment to warehouse or job site.
- One laborer at terminal to unfasten tie-downs, and prepare empty containers for return trip.

Hauler truck with operator and one helper can load 30,000 brick in approximately 90 minutes and unload in approximately 60 minutes.

Empty Car Return

Empty cars are returned with containers in place at no extra cost.

Assuming Pack-Haulers already in use as delivery equipment, the plant operator needs only to obtain the car and containers from the railroad serving his plant or buy or lease the car and containers to complete this rail hauling program.

This system can be used to advantage in supplying brick to large projects such as hospitals, schools, military installations and industrial plants having a private railhead, where the brick are to be delivered over a large construction area. A Pack-Hauler could be driven or shipped to the job where it would unload and deliver brick to all points of the construction site. After completion of the brick work the unit would be returned to its home base.

Dual Purpose

Another benefit of this system is that Pack-Hauler equipment can be used for normal daily delivery operations at loading and unloading sites when not needed for Pactainer operations. The units are ready for either operation without any changes whatsoever. This means in-plant or over-the-road hauling assures full-time use.

Likewise no extra or special labor is required. The same operator is in charge of the Pack-Hauler for car-loading, hauling, or in-plant functions. At the terminal end the same operator is in charge of the Pack-Hauler for car-unloading, building inventory, or hauling to the job.

Still another benefit is that the railroads are able to provide a fast, dependable service, offering long haul economies, while the Pack-Haulers assure motor-carrier flexibility at low operating cost.

Alternate Plans

To supplement the plan listed on the left, alternate plans are available including arrangement for the railroad to furnish containers, a five year leasing plan, or outright purchase of both cars and containers.

Feature Lightweight Clay at Meeting

Program for 14th Pacific Coast Meeting in San Francisco

One of the highlights of the 14th Pacific Coast meeting of the American Ceramic Society will be the lightweight structural clay products symposium. The meeting will be held at the Jack Tar Hotel, San Francisco, California from October 25 to 28.

B&CR Editors Participate

The editors of BRICK & CLAY RECORD will be taking an active part in presenting the symposium on lightweight clay products. Neal Mohler, managing editor of BRICK & CLAY RECORD, will be the moderator of the symposium panel. J. J. Svec, editor and publisher of BRICK & CLAY RECORD, will introduce the subject to the audience before the individual speakers take over. The rest of the panel will consist of the following: Paul B. Johnson of the Structural Clay Products Research Foundation, Geneva, Illinois, who will speak on "SCR Process For Manufacture of Lightweight Aggregate." Owen Cross of Swindell-Dressler Corp., Pittsburgh, Penna., will speak on the "Drying and Firing of Lightweight Structural Clay Block." Norman Small of the Columbian Machine Company, Vancouver, Washington, will discuss "The Forming of the Clay Block". "A Kiln Designed to Burn Lightweight Clay Block" will be discussed by Dean Tinker of Ohio Kilns, Inc. The symposium will conclude with the showing of a movie on a newly completed plant in North Carolina, which will be shown by Neal Mohler.

There will be other sessions on structural clay products and refractores which will be of interest to BRICK & CLAY RECORD readers.

The Structural Clay Products general session will include papers on "Developments, Engineering and Use of the Miller Vibrating Hearth Calcining Furnace for Better Production Control," by B. C. Miller of the Miller Equipment Co., Salisbury, N.C.; "The Basic Considerations of Kiln Design and Controls in the Manufacture of Clay Products", by Owen Cross of the Swindell-Dressler Corp., Pittsburgh, Pa.; "Quality Control Through Automation in Grinding", by Ed Meeka, Kraftile Co., Fremont, Calif.; "Coloring Structural Clay Products by Means of Ceramic Powders Suspended in Organic Liquids", by Harold P. Cahoon of the Interstate Brick Co., Salt Lake City, Utah, and concluding this session will be "Structural Clay Products Research Projects" by Paul V. Johnson of the Structural Clay Products Research Foundation in Geneva, Ill.

Refractories in Glass

In the session on refractories in glass, the following papers are scheduled: "Test Devices to Study the Effect of Glass Furnace Environment on Refractory Materials", by G. Don McTaggart, of Corhart Refractories Co., and Charles E. Dyer of Corning Glass Works; "Guide to Selection and Use of Zircon Refractories in the Glass Tank", by Everett A. Thomas, of The Chas. Taylor Sons Co.; "New Refractories for the Glass Industry", by Frank C. Steimke, Walsh Refractories Corp.; "Laboratory Testing of Fused-Cast Refractories", by Karl H. Sandmeyer of Harbison-Carborundum Corp.; "The Introduction to the Glass Industry of Suspended Air Cooled Basic Regenerator Roofs and the Incorporation of New Designs in Regenerator Construction," by Thomas F. Meagher, the H. K. Porter Co., San Francisco, Calif., Ned W. Roudabush of the H. K. Porter Co., Pittsburgh, Pa., and David Billings of the Gallo Glass Co., Modesto, Calif. And finally, "A Comparison of New Refractory Fibers", by J. P. Sterry of the H. I. Thompson Fiber Glass Co., Los Angeles, Calif.

Refractories in Steel

In the session on Refractories In Steel, the following are scheduled: "Developments in Steel Plant Refractories", by W. S. Debenham, U. S. Stel Corp., Pittsburgh, Pa.; "The Effect of Minor Constituents on the Properties and Peformance of Basic Brick", by H. M. Kraner, Bethlehem Steel Co., Bethlehem, Pa.; "Practical Evaluation of Oxygen Furnace Lining Installation and Performance", by Glenn D. Ziegle, Kaiser Steel Corp., Fontana, Calif.; "Measurement of Stresses in Furnace Arches", by W. S. Wade, H. L. Johnston, and J. R. Bachman, all of Kaiser Refractories Division, Philadelphia, Pa.; "Transvaal Chromite in Basic Refractories", by H. A. Heiligman, H. M. Mikami and D. G. Samuel, all of E. J. Lavino and Co., Philadelphia, Pa. And finally Charles O. Hulse and Joseph A. Pask, both of the University of Calif., will close up this session with "An Analysis of the Creep of a Fireclay Refractory".

Long service ahead for refractory concrete car tops

These refractory concrete car tops are ready for a life of many firings. Cast in place with LUMNITE calcium-aluminate cement and aggregate, they will resist the soaking heat in clay products tunnel kilns. Spalling and cracking will be minimized. And because refractory concrete has low volume change, they stay level, minimizing car wrecks. Plants find that installation is easy and economical with refractory concrete. No skilled labor is required. After placing, concrete reaches service strength in 24 hours. For extra convenience, castables containing LUMNITE cement are available from leading manufacturers of refractories. These are packaged mixtures, ready to use. Simply add water, mix and place. For more information, write Universal Atlas Cement, 100 Park Avenue, New York 17, N.Y.

"USS," "Atlas" and "Lumnite" are registered trademarks. L-200

Universal Atlas Cement
Division of
United States Steel

Offices: Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco

Circle Service No. 32

BONNOT Expanded

RESEARCH LAB

is for

YOU!

As reflected by the 1962 SCPI Convention Program . . . continually expanding activity by the Structural Clay Products Research Foundation calls for congratulations! And . . .

To make added contributions to clay industry progress, Bonnot offers its new, enlarged and versatile research laboratory just recently completed. YOU ARE INVITED TO USE THESE SPECIALIZED CERAMIC TEST FACILITIES WITHOUT COST OR OBLIGATION.

Size of the (de-aired pugging and vacuum extrusion) equipment is such that comprehensive tests require only a minimum amount of raw material to accurately determine processing characteristics for a full production run of your ware.

Some of the many variables that can be checked faster and fully evaluated are:

- POWER REQUIREMENTS
- PRODUCTION CAPACITIES
- PROPER GRINDING AND GRAIN SIZES
- DESIRABLE MOISTURE CONTENT
- PROPER DIE DESIGN
- PROPER MATERIAL SELECTION AND PROPORTIONING FOR OPTIMUM PROCESSING

Personnel, experienced in design and engineering—and with the industry's strongest background in solving production problems — is always available. Also, all these facilities are available for "curing existing plant headaches."

We repeat — you are invited to use these facilities — you are urged to be on hand personally when your raw materials are tested. This service is just one part of the "Bonnot forward look in engineering and research." You can schedule your tests with a letter or phone call . . . and it's first come, first served.

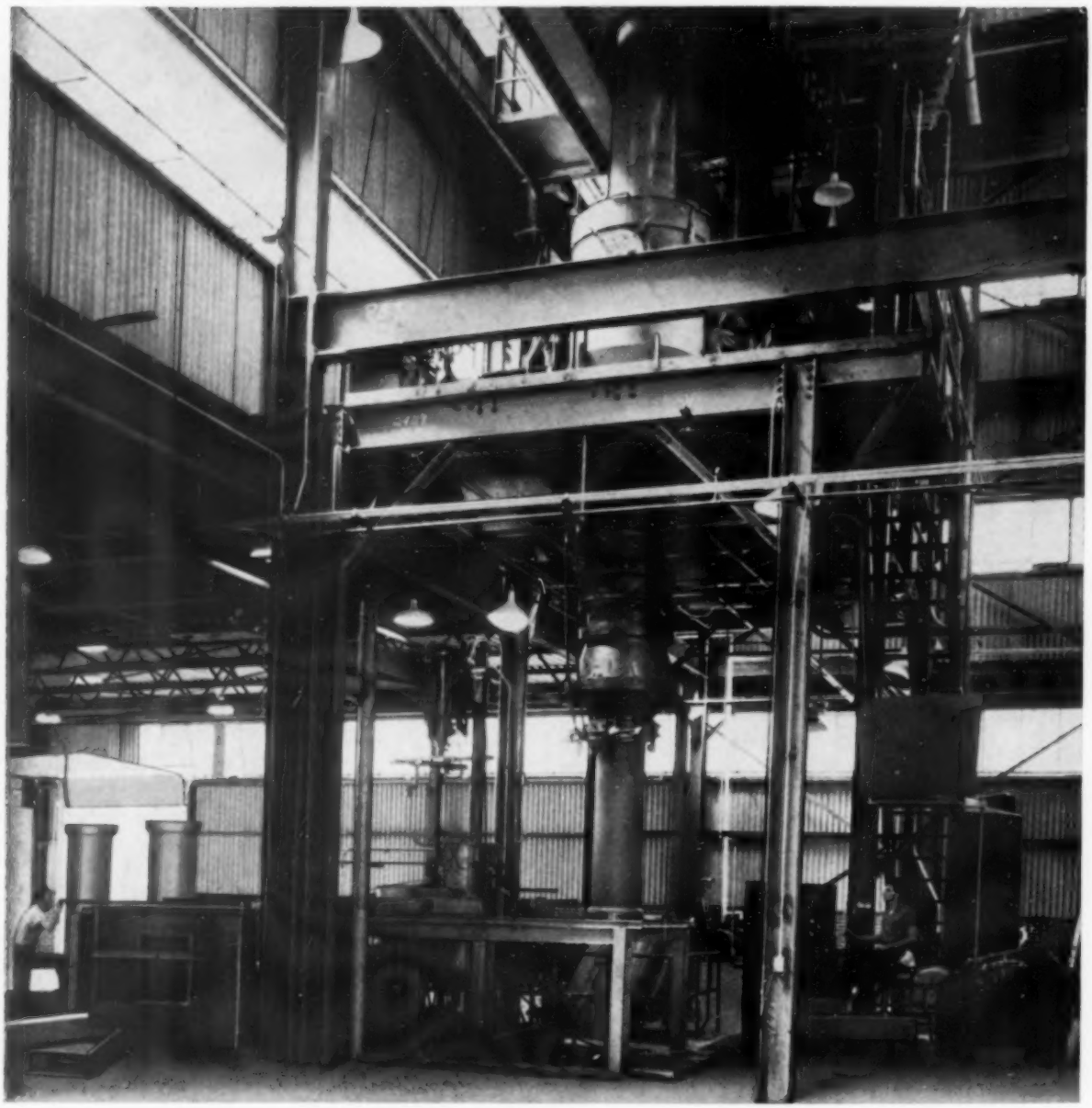
B DIVISION

The BONNOT Co. / Canton, Ohio

THE C. L. GOUGLER MACHINE CO. OF KENT, OHIO

Circle Service No. 33

PEARNE AND LACY
HYDRAULIC SEWER PIPE PRESS
AND
OCTOPUS



FOR CONTINUOUS AUTOMATIC PRODUCTION, FINISHING & HANDLING OF LARGE SEWER PIPE.

Write for details on the many new labor saving features in automatic handling and finishing equipment.

Engineers and Manufacturers of Automatic Handling and Finishing Equipment for the Ceramic Industry.

P.O. Box 3366, Terminal Annex,
Los Angeles 54, California Phone: CU 3-1268

Eastern Representative
Dwight B. Hendryx, 6621 Darlington Rd., Pittsburgh, Pa.

Circle Service No. 34

PEARNE AND LACY INC. MACHINE COMPANY

Two Firms Join CSPA

The addition of American Vitrified Products Co., and U. S. Concrete Pipe Co. (formerly Universal Sewer Pipe Corp.) to membership in the Clay Sewer Pipe Association, Inc., Columbus, Ohio, was announced by Hudson Hillyer, president. American Vitrified Products Co., operates 13 plants across the country.

A non-profit organization, the Clay Sewer Pipe Assn., largest association of vitrified clay pipe manufacturers in the U. S., now embraces 14 member manufacturers, operating in 17 states north of the Ohio River and east of Indiana, as the regional affiliate of National Clay Pipe Manufacturers, Inc., of Washington D. C. Entry of these two new member manufacturers is expected to immensely increase the quality and amount of promotional work carried on by Clay Sewer Pipe Assn., on a regional level.

Cherokee Aids Museum

The Southeastern Transportation Museum at Lakewood Park, Atlanta, Ga., acquired its third steam engine recently.

It was donated by the Cherokee Brick and Tile Co., of Macon, and was moved to Atlanta from Macon by the Southern Railway.

Baby Needs a Pair of Shoes

Babies grow up to be people. And people are what makes the economy go round. Here's what DuPont economists figure the 4,000,000 babies that were born in 1960 will use up in their lifetimes:

—a billion pairs of shoes
—25 billion pounds of beef
—63,000,000 suits and dresses
—11,000,000 new cars
—91 billion gallons of gasoline
—6,500,000 refrigerators
—1,000,000 new homes
—200,000,000 tons of steel
—65,000,000 tons of paper
—50 billion quarts of milk.

By 1975, the birth rate will be around 6,000,000 a year, and you can imagine what that will do for the economy in, say, the year 2000.

L. W. Block for India

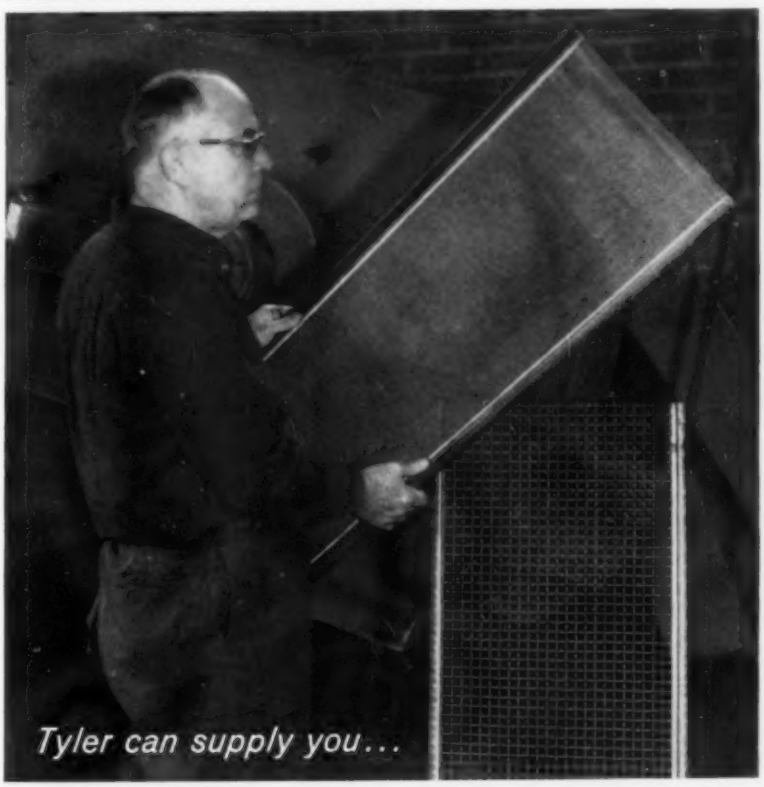
Rabindar Singh, director of India's National Building Organization believes SUNY College of Ceramics at Alfred University may have the key to two of his nation's construction problems.

Singh spent a week conferring with faculty members on the use of lightweight ceramic building blocks developed here and on the possible use of Indian River silt in wall tile production.

India must use solid brick for its buildings because it has no lighter substitutes. This deficiency makes it necessary to use four times as much steel for support as does the U. S.

Clough Heads CFLI

James L. Clough, sales manager for the Evans Pipe Co., Uhrichsville, Ohio, has been elected president of the Clay Flue Lining Institute, an association of clay flue lining manufacturers, with plants and branches strategically located to serve the U.S. and Canada. Clough succeeds



FABRICATED WIRE CLOTH SECTIONS TO FIT EVERY VIBRATING SCREEN MADE

Tyler fabricates screen sections to fit all existing makes of vibrating screens, using wire cloth drawn from inventory, fabricated in a special department to give you fast delivery. Since Tyler originated the screen-tension concept, this service is backed by industry's broadest experience in producing screen sections—with special hook strips to maintain drum-head tension.

It's wise to order replacement woven wire cloth from Tyler—world's largest producer, with unequalled technical service to assure proper application. Call or write The W. S. Tyler Company, 3615 Superior Avenue, Cleveland 15, Ohio.

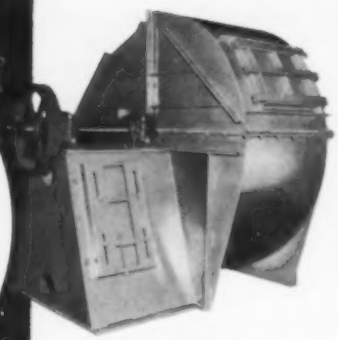
TYLER

WOVEN WIRE SCREENS • SCREENING MACHINERY • TESTING SIEVE EQUIPMENT

Circle Service No. 35

ROBINSON FANS

BOOST Ware Tonnage, *CUT* Fuel and Power Costs



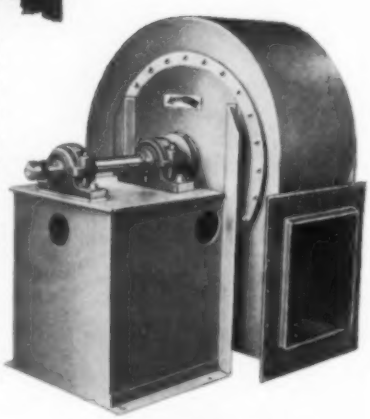
TYPE J FAN
Forces draft, exhausts heated air, recirculates air in kilns and dryers.

HI-DRAFT FANS
For periodic down draft ceramic kilns.

Robinson Fans and Blowers are custom-designed and built to complement your equipment . . . fit your production needs. When erosion, abrasion, corrosion, heat, or other severe conditions create air handling problems, call Robinson—we'll plan a system that's properly designed to help you improve tonnage without excessive fuel and power consumption.

Learn about Robinson's round-the-clock Factory-Field Service—a Robinson *plus* that protects your investment.

Write for descriptive literature.



HIGH TEMPERATURE AND DRYER FANS
For recirculating and exhausting systems on kilns and dryers.

ROBINSON
FANS • BLOWERS

ROBINSON VENTILATING COMPANY
119 HENDERSON STREET • ZELIENOPLE, PA.

REPRESENTATIVES IN PRINCIPAL CITIES

Circle Service No. 36

Joseph L. Maloney, who resigned recently.

Incorporated in 1954, CFLI carries on an active program of research, development, public relations and promotion in the best interests of the public and the clay flue lining industry, aimed at fire prevention.

Coffey Heads CBTI

J. J. Coffey, Cooksville-Laprairie Brick Ltd., Toronto, was recently elected president of the newly formed Clay Brick & Tile Institute.

The national association was formed by clay brick and tile manufacturers to promote greater use and manufacturing of structural clay products. It succeeds the former Brick & Tile Manufacturers' Assn. of Canada.

Membership already represents 81% of Canada's production, and eventual inclusion of virtually all manufacturers in this field is expected.

Name CPAS Architect

Clay Products Association of the Southwest, Austin, Texas, announced recently the appointment of Edwin E. Nowlin as architectural representative of the association for the territory of Oklahoma City, Okla., to Amarillo, Texas. The Clay Products Association of the Southwest is composed of southwestern brick and tile manufacturers who are genuinely interested in the healthy propagation of the brick and tile industry, and attempts to attain this end through their active support of a complimentary brick and tile engineering service, the Clay Products Association of the Southwest.

Searight Appointed

The appointment of Curt Searight as regional sales manager, with headquarters at Mexico, Mo., has recently been announced at Kaiser Refractories, Oakland, Calif.

In his new position, Searight will have over-all responsibility in the St. Louis, Rock Island and Indianapolis districts for the sale of refractory materials which are used by industry in a variety of high temperature applications.

Now you can receive FREE information on:

- Advertised Goods
- New Products
- New Literature

HOW TO USE:

Simply circle the number corresponding to the advertisement or product number on the card. Mail the card and we will do the rest. You may circle as many numbers on one card as you wish.

Use this valuable service to obtain complete information about the many products available to you. Send us one card now and save the second card for later use.

Brick & Clay Record
P.O. Box 3382
Merchandise Mart Sta.
Chicago 54, Illinois

1	16	31	46	61	76	91	106	121	136	151	166	181	196	211
2	17	32	47	62	77	92	107	122	137	152	167	182	197	212
3	18	33	48	63	78	93	108	123	138	153	168	183	198	213
4	19	34	49	64	79	94	109	124	139	154	169	184	199	214
5	20	35	50	65	80	95	110	125	140	155	170	185	200	215
6	21	36	51	66	81	96	111	126	141	156	171	186	201	216
7	22	37	52	67	82	97	112	127	142	157	172	187	202	217
8	23	38	53	68	83	98	113	128	143	158	173	188	203	218
9	24	39	54	69	84	99	114	129	144	159	174	189	204	219
10	25	40	55	70	85	100	115	130	145	160	175	190	205	220
11	26	41	56	71	86	101	116	131	146	161	176	191	206	221
12	27	42	57	72	87	102	117	132	147	162	177	192	207	222
13	28	43	58	73	88	103	118	133	148	163	178	193	208	223
14	29	44	59	74	89	104	119	134	149	164	179	194	209	224
15	30	45	60	75	90	105	120	135	150	165	180	195	210	225

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ ZONE ___ STATE _____

B&CR-10-61 This card void after December 28, 1961

First Class
Permit No. 183
Chicago, Ill.

BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed In the United States

POSTAGE WILL BE PAID BY:

Brick & Clay Record
P.O. Box 3382
Merchandise Mart Sta.
Chicago 54, Illinois

First Class
Permit No. 182
Chicago, Ill.

BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed In the United States

POSTAGE WILL BE PAID BY-

Brick & Clay Record
P.O. Box 3382
Merchandise Mart Sta.
Chicago 54, Illinois

1	16	31	46	61	76	91	106	121	136	151	166	181	196	211
2	17	32	47	62	77	92	107	122	137	152	167	182	197	212
3	18	33	48	63	78	93	108	123	138	153	168	183	198	213
4	19	34	49	64	79	94	109	124	139	154	169	184	199	214
5	20	35	50	65	80	95	110	125	140	155	170	185	200	215
6	21	36	51	66	81	96	111	126	141	156	171	186	201	216
7	22	37	52	67	82	97	112	127	142	157	172	187	202	217
8	23	38	53	68	83	98	113	128	143	158	173	188	203	218
9	24	39	54	69	84	99	114	129	144	159	174	189	204	219
10	25	40	55	70	85	100	115	130	145	160	175	190	205	220
11	26	41	56	71	86	101	116	131	146	161	176	191	206	221
12	27	42	57	72	87	102	117	132	147	162	177	192	207	222
13	28	43	58	73	88	103	118	133	148	163	178	193	208	223
14	29	44	59	74	89	104	119	134	149	164	179	194	209	224
15	30	45	60	75	90	105	120	135	150	165	180	195	210	225

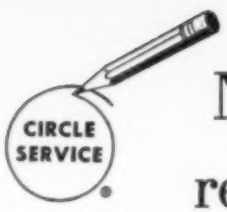
NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ ZONE ___ STATE _____

BBCR-10-61 This card void after December 28, 1961



Now you can receive FREE information on:

- Advertised Goods
- New Products
- New Literature

HOW TO USE:

Simply circle the number corresponding to the advertisement or product number on the card. Mail the card and we will do the rest. You may circle as many numbers on one card as you wish.

Use this valuable service to obtain complete information about the many products available to you. Send us one card now and save the second card for later use.

Brick & Clay Record
P.O. Box 3382
Merchandise Mart Sta.
Chicago 54, Illinois

A PQ Soluble Silicate to Fit High Heat Needs

Sodium silicates unmixed with other materials begin to soften at dull, red heat, are plastic at bright red and flow freely at white heat. The high temperature behavior of some PQ alkaline silicates after reaching an anhydrous state is shown below:

PQ Product	Approximate softening point, Degrees F.*	Approximate flowing point, Degrees F.**
N,O,N38, G,SS 65 Pwd.	1200	1545
RU	1140	1455
D,C,GD,SS-C Pwd.	1095	1400

*Viscosity reaches 4 x 10^7 poises

**Viscosity reaches 10^5 poises

Commercial potassium silicates (our Kasil products) have even higher flow points.

PQ specializes in soluble silicates to fill your requirements for either dry or liquid forms. The benefit of a century's experience in silicate manufacture and use is available to you.

1831-130th Anniversary-1961

Soluble PQ Silicates

PHILADELPHIA QUARTZ CO.

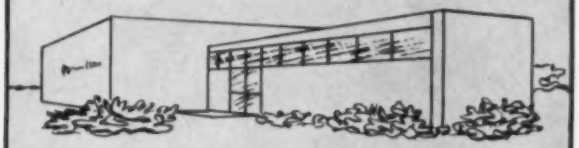
1148 Public Ledger Bldg. • Philadelphia 6, Pa.

Associates:
Philadelphia Quartz Co. of Calif., Berkeley & Los Angeles, Calif.; Tacoma, Wash
National Silicates Limited, Toronto, Canada

9 PLANTS • DISTRIBUTORS IN OVER 65 CITIES

TRADEMARKS REG. U.S. PAT. OFF.

Circle Service No. 37



NEW TILE HORIZONS

with Carolina Kyanite

New, larger tile sizes and special shapes are now possible *and practical* with the addition of Carolina Mullite or Kyanite to the mix.

Architecturally accepted uses of larger tile such as the 12" x 16" size shown above, include such functional and decorative applications as swimming pool liners, interior and frostproof pilasters and walls. With a slip resistant surface, the possibilities for floor applications are almost unlimited.

These new tile sizes and shapes are coming about through continuous research with the many natural advantages of light colored Carolina Kyanite, such as superb pressing quality, extra strength imparted, and dimensional control. Consult Commercialores' engineers on ideas for your "NEW TILE HORIZONS". Generous samples and assistance are yours for the asking.

Grain Sizes 35, 48, 100, 200, 325 mesh

Kyanite
Mullite
COMMERCIALORES
INCORPORATED

Clover, South Carolina • 30 Church Street, New York 7, N. Y.

Warehouse—Truck load lots:
East Liverpool, Ohio • Telephone FUlton 5-5700

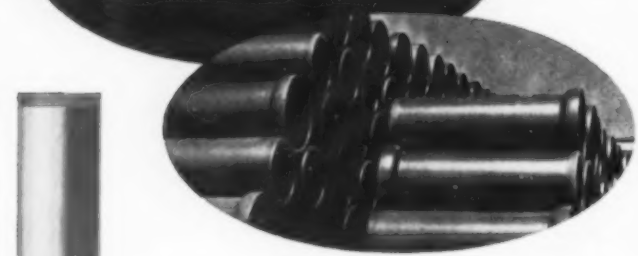
Western Distributor:
W. P. Keith Co., Santa Fe Springs, Calif.

Circle Service No. 38

Salting sewer pipe with borate and salt in beehive kiln.

Salters! get a better glaze...

add RASORITE® 46
sodium borate concentrates



...a thrifty form of borax for you!

When used for salt glazing, RASORITE 46 is a real performer! This low-cost borate ore concentrate equals higher priced borax and boric acid in its salt-glazing action. You get their benefits at a discount. So, add RASORITE 46 to your salting to improve the quality of your ware... to save on fuel costs... to get increased production with fewer rejects. Remember, a borate-salt mixture yields the best glazes for sewer pipe... and RASORITE 46 gives you the most B_2O_3 for your money!

Write for further information today!

U.S. BORAX

630 Shatto Place, Los Angeles 5, California

Distributors Conveniently Located in All Principal Cities

Circle Service No. 39

Look at Market . . .

(*Continued from page* 45)

people whose children have left home, young professional people or couples without children. The point we must remember is that our older population is growing rapidly—and will continue to expand at a fantastic rate. In addition, there are many childless couples, or couples with small children for whom this type of housing would be ideal.

Sixth, what can we do? The most important thing for us to do is recognize the tremendous potential in this market, study it, and become sold on it ourselves. Then we can begin to sell it to others.

Sell Idea

We should begin selling the idea immediately to large and small builders alike. We do not have to wait for a large urban renewal project to try and push our concept. We can instead try to interest private investors on a small project, thus gaining case histories which can be used on other larger ones. We need to publicize any project of this type using our products. We need photographs of these projects. We need a slide presentation for builders, investors, service clubs, and government officials. We need a brochure showing various drawings and photographs of existing projects and ideas for new ones. We need hard sell copy showing why clay products are the only building material practical for these buildings.

We need all of these things—but most of all we need the enthusiasm of the industry for this market. Elimination of apathy is a must. When and if we can generate the proper enthusiasm for this market, our other more expensive needs will somehow be met. But we must do it at once! Tomorrow comes awfully fast and quickly turns into yesterday—a time which might have been.

Electro Names Bradstreet

The Electro Refractories and Abrasives Corp., announced the appointment of Samuel W. Bradstreet as technical director.

Prior to joining Electro, Mr. Bradstreet was supervisor in inorganic technology at Chicago's Armour Research Foundation.

AMERICAN MINERALS, INC.

P. O. BOX 7248
EL PASO, TEXAS
3666 DONIPHAN DRIVE

Air Floated & Granular Manganese

Always Ready to Supply You With

MANGANESE

From Our Own Mines
Ground To Any Mesh Desired
In Our Modern Plant

IMMEDIATE SHIPMENTS FROM WAREHOUSE STOCK

- IN BULK
- IN BAGS
- IN "FLO-BINS"

Ores from

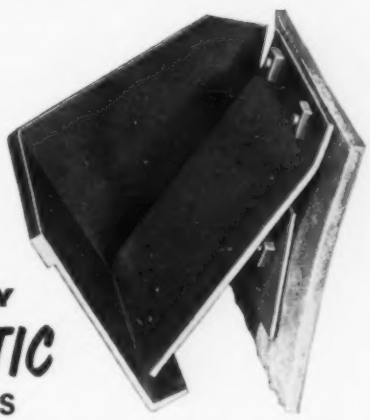
AMERICAN MINERALS, INC.

assure you the most complete range of specifications. Consistency and Dependability

"MINE TO MILL TO MARKET"

Circle Service No. 40

INCREASE YOUR CONVEYOR CAPACITY 30%!



PEKAY
M-T-MATIC
BUCKETS

Pekay M-T-Matic Buckets prevent the sand and gravel build-up in conventional buckets which robs your elevator conveyor of 30% or more of its capacity. A separately mounted stripper plate, replacing the back of one-piece buckets, efficiently dislodges even frozen materials. Your M-T-Matics stay clean, ready to pick up a full load every trip!

Besides full-load savings in time and money, M-T-Matics have long life. Hard wear-and-tear cleaning by pounding and prying is avoided. M-T-Matics also reduce conveyor belt wear by forcing the belt to follow the contour of the pulley. This avoids the lifting and stretching action which takes place when conventional buckets are used.

Pekay M-T-Matics are easily installed on any belt or chain elevator and are available in all standard sizes. Mail coupon for full information.

HERE'S HOW IT WORKS...
As the M-T-Matic reaches the head pulley, the stripper plate moves around the radius independently of the bucket mounting. This automatically forces the stripper plate outward two to three inches in a lever-like action which loosens the contents. As the bucket follows over the top of the pulley, the **entire** load is emptied — not just a portion which gets smaller every trip.

MAIL THIS COUPON FOR DETAILS

PEKAY MACHINE & ENGINEERING COMPANY, Inc.
2510 West Lake Street, Chicago 12, Illinois

Please send me information and prices on your M-T-Matic Buckets.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

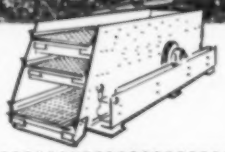
Bucket Size_____

Circle Service No. 41

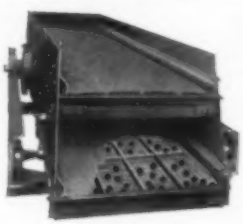
5 Big Reasons

why the name SECO means BETTER screening

1 SECO offers a wide variety of screens to fill every need, in fact about 450 single, double, triple and half deck models.

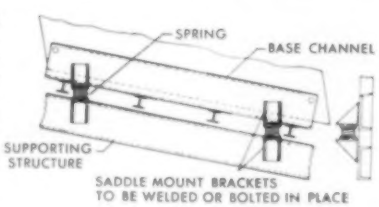


2 SECO offers the extras you need for screening, damp, sticky materials: WIRE cloth heating attachment and a ball tray (shown at right), for use alone or with heater.



3 SECO has been manufacturing vibrating screens *exclusively* for more than a quarter of a century. That's your assurance of vibrating screen know-how second to none.

4 SECO has pioneered many of the important changes in screens including the introduction of the SECO Equalizer Assembly and the spring and saddle mount (right) which isolates the screen from interference of plant frequencies and prevents the screen from transmitting vibration to supporting structures.



5 SECO puts the accent on service. On those infrequent occasions when a SECO screen needs a replacement part, SECO ships standard parts via air the *same day* they're ordered!

SEND TODAY for 4-bearing Catalog #205 or TWIN BEARING booklet TB-21

SECO
PRODUCER PROVEN
VIBRATING SCREENS

SCREEN EQUIPMENT CO., INC., Buffalo 25, New York

Circle Service No. 42

Porter Names Crandall

Eugene R. Crandall has been named manager of Mullite Operations, Shelton, Conn., Works, Refractories Division, H. K. Porter Company, Inc.

Prior to joining Porter, Mr. Crandall was with American Refractories and Crucible Corp., North Haven, Conn.

Mr. Crandall is a graduate of New York State College of Ceramics and has a degree in Ceramic Engineering. His professional club memberships include The Institute of Ceramic Engineers, Professional Society and American Ceramic Society.

Basic Interim Report

Basic Inc., Cleveland, Ohio, reports earnings for the first six months were $545,533 on sales of $11,580,296. In 1960 the comparable net income was $980,439 on sales of $14,539,682.

In the company's interim report to share holders H. P. Eells, chairman stated that the reduced net income for the first six months was attributable to lower sales of refractory products, the result of a depressed level of steel production for the first three months.

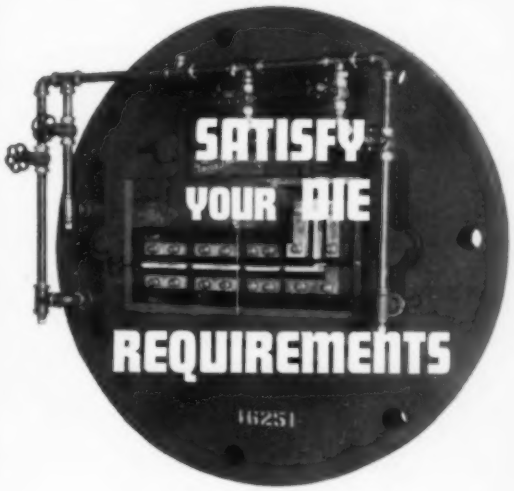
Sales Aid Appointed

Howard Strandberg has been appointed assistant general sales manager of the Refractories Division of H. K. Porter Co., Pittsburgh, Pa., according to a recent announcement.

Prior to his appointment, Mr. Strandberg was the Division's New York district sales manager. He joined Porter in November, 1959. Mr. Strandberg previously was executive vice-president in charge of operations for Seaboard Refractories Co., Fords, New Jersey.

Oops!

The September editorial in BRICK & CLAY RECORD listed the profits from the sale of 20,000,000 SCR brick as $4,000,000. Many of our readers called our attention to the fact that this was a profit of $200 per thousand brick. Needless to say, the profit doesn't come close to this figure and the original "twenty million brick" should have read "twenty million dollars worth of brick." We still realized the $4,000,000 profit, but had to sell more brick to do it.



PROFITS IN CLAY PRODUCTS BEGIN WITH "LOUISVILLE DIES"

Louisville Machine Manufacturing Co., under new, progressive management, is ready and able to provide you with high-quality dies for high-quality products. Representing a half century of experience gained in the "heart of the clay industry", Louisville Machine Manufacturing Co. places its engineering and manufacturing skills at your disposal.

Benefits from custom designed "LOUISVILLE DIES"

- DESIGN ENGINEERING
- LOWEST ULTIMATE COST
- MANUFACTURING SKILL
- REPLACEMENT PARTS ON OLD & NEW DIE DESIGNS

THE

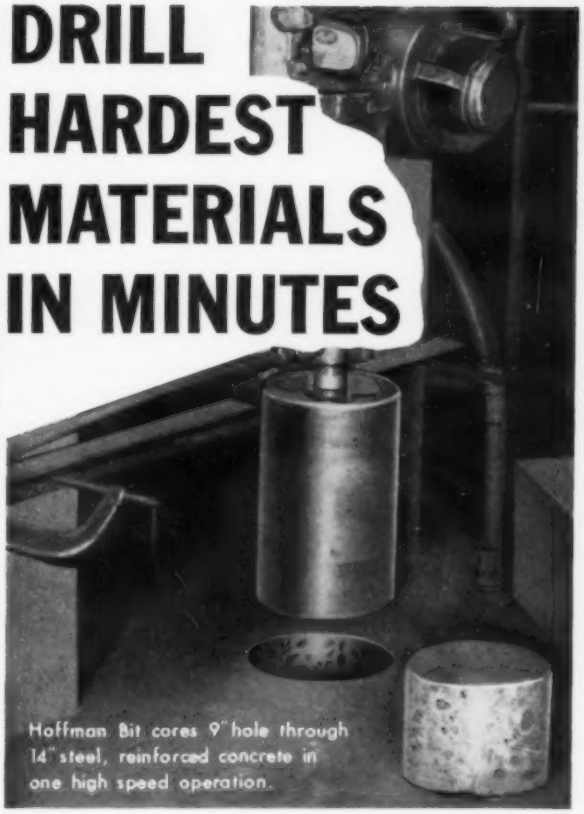
LOUISVILLE MACHINE MANUFACTURING CORP.

205 LINCOLN LOUISVILLE, OHIO

PHONE TR 5-2600

Circle Service No. 43

DRILL HARDEST MATERIALS IN MINUTES



with HOFFMAN MASONRY CORE BITS

Here are Diamond Surface Set or impregnated Bits that save valuable operating time . . . assure fast, smooth coring on any test . . . regardless of material.

Hoffman Masonry Bits have a longer, accurate drilling life because each bit is engineered for the specific job . . . core at predetermined speeds to eliminate performance guesswork. Hoffman Bits produce amazing time and cost saving results drilling Zac block, fused quartz, marble, granite, tile, clays, etc. Standard sizes are from $\frac{3}{8}$ to 14 inch diameters in 6 or 14 inch lengths.

Send for Catalogue and Prices — FREE.
Ask about Free tests of your material.

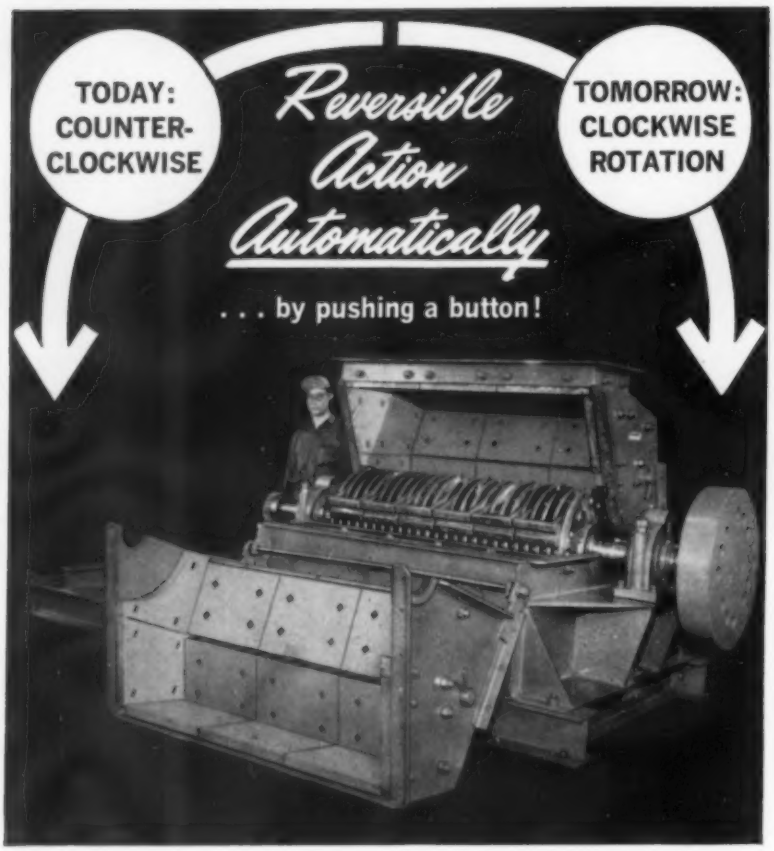
Hoffman Diamond Segmented Circular Saws are also available for production sawing of hard abrasive materials such as tile, slate, fused silica, concrete block, etc. In 8" to 36" diameters.

Diamond Tool Experts Since 1902

HOFFMAN BROS. DRILLING CO.

100 Cedar St., Punxsutawney, Penna.

Circle Service No. 44



REVERSIBLE WILLIAMS HAMMER MILL halves wear, cuts grinding cost, improves product

Hammers rotating in clockwise direction one day, in the opposite direction next day, almost doubles their service life, restores original cutting edges AUTOMATICALLY—literally cuts replacement expense, labor and downtime in half!

Twin sets of reversible and interchangeable grinding plates last up to twice as long, grate bars frequently more than twice as long.

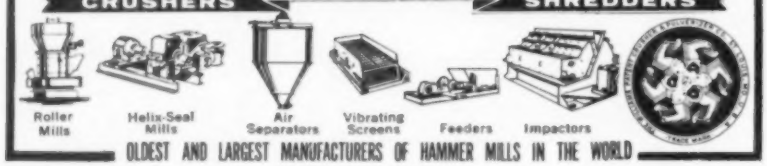
But Williams superiority doesn't stop there . . .

Reinforced super-strong welded steel construction—heavy duty oversize steel shaft—oversize self-aligning bearings in sealed housings—these are only a few of the reasons why a Williams always ranks first as a profit-making investment. There's a size for every job—capacity 2 to 200 tons hourly. *Write for literature today.*

Williams Patent Crusher & Pulverizer Co. • 2709 North Broadway • St. Louis 6, Mo.

WILLIAMS

CRUSHERS GRINDERS SHREDDERS



OLDEST AND LARGEST MANUFACTURERS OF HAMMER MILLS IN THE WORLD

Circle Service No. 45

Ceramic Block . . .

(*Continued from page* 53)

tory as well as in pilot plant trials and production.

Mixing and Absorption

Figure 2 shows the relationship of mixing time and action type of a given composition and subsequent percent absorption of the formed and fired ceramic block (24-hour cold water soak). Both the ribbon and muller type action curves substantially parallel each other; hence, there is no appreciable decrease in ware absorption in either case if the total mixing time is extended beyond 360 seconds. For the composition in question, the ware formed and fired from the composition mixed by ribbon type action differed from ware formed and fired from the composition mixed by muller type action in their respective percent absorption by approximately 5%.

For example, a ceramic block in which a ribbon mixer was used 420 seconds in its composition mixing stage had a fired ware absorption of 15.4%. The corresponding absorption for a ceramic block in which a muller type mixer was used under the same conditions was 10.5%. Hence, it becomes evident that the effective kneading action of the Simpson Mixer per unit of total mixing time intermixes the aggregate particles and water to such an extent that absorption specifications can be easily achieved.

One might hurriedly make the false assumption that the fired absorption and compressive strength could be correlated in a ceramic block. Initially that may appear to be true; however, the steady increase of ware compressive strength made from the composition which was mixed by muller type action, shown in Figure 1 does not correspond to the apparent leveling off of absorption data with the same total mixing time as shown in Figure 2.

Conclusions

Conclusions. 1. For the given composition and firing schedule, ware formed from mixtures prepared in muller type equipment had superior fired compressive strength and lower percent absorption than ware in

ORGANIC BINDERS

GLUTRIN

(liquid)

or

GOULAC

(powder)

Especially suitable for increasing the molding and dry strength of

- BRICK
- CLAY REFRACTORIES
- NON-CLAY REFRACTORIES
- SILICA REFRACTORIES
- REFRACTORY CEMENTS
- PLASTIC REFRACTORIES
- TERRA COTTA
- STRUCTURAL TILE
- SEWER PIPE
- SAGGERS
- FLUE LINING

Small amounts required—easy to use. Economical and larger production of first quality produc absorbs the investment many times.

Many successful users. We'll be glad to submit samples and our suggestion on procedures and amount needed.

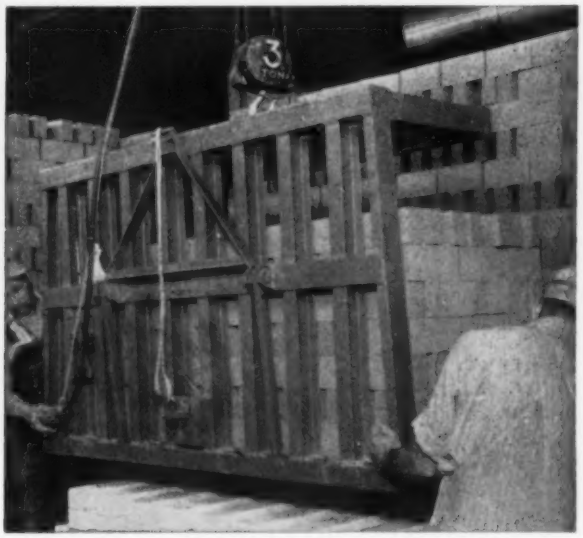
Robeson Process Company

P.O. Box 960 • Erie, Pa.

Plant - Johnsonburg, Pa.

Circle Service No. 46

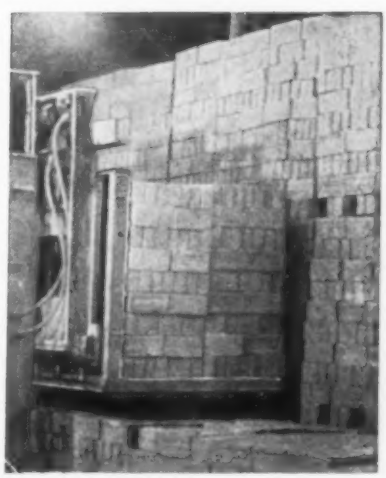
Make Brick Handling Easy...



PRIESTER Brick Forks

- Save Time
- Save Money
- Save Labor

Also Priester truck cranes for unloading from delivery trucks. Write for bulletin.



Brick in units of any size are handled by Priester Brick Forks. Automatic operation simplifies and speeds brick handling, setting and drawing kilns, loading and unloading trucks and box cars.

Forks with flap grippers for cored and solid brick. Give service . . . take the hard work out of brick handling. Write today for more information.

BRADNEY MACHINE CO., INC.

Middletown, New York

Circle Service No. 47

which a ribbon type mixer was used.

2. For the composition in question, 480 seconds (50% dry, 50% wet) appears to be the maximum total mixing time if the muller type action mixer is to be used and the ware is to possess a pleasing texture.

3. The kneading action inherent with muller type mixer is apparently superior to the fluffing action of the ribbon mixer under the conditions of these tests.

Brick Plant Hit By Fire

An exploding gasoline tank started a fire which caused damage over $10,000 at the Oak Hill Firebrick plant in Oak Hill, Ohio, recently.

The fire destroyed the roof and upper portions of a building which housed the plastic firebrick division of the plant. Two employees working in the vicinity escaped serious injury. This is the third major fire in the village of Oak Hill in eight months.

Staff Change at Kaiser

George C. Davis, Jr., has been promoted to the new position of director of Technical Planning for Kaiser Refractories, Oakland, Calif.

Plant Designed Lifters . . .

(*Continued from page* 55)

Costs for rigging up the two lifts were not excessively high, inasmuch as the two air cylinders, operated by a simple lever control at the point where the aluminum plates are attached, were already available. The shop fabricated the two-way rolling superstructure, as well as the supports from which they hang. In return, breakage and damage have been substantially cut, one of the most tiring jobs in the four-foot pipe plant has become no more fatiguing than the average job at any other point in the plant.

More Than Adequate

The plates, because of a slight upward tilt as they lift, covering only six inches in the process, have proven more than adequate to support the pipe firmly in place, with little or no slippage to be contended with.

Further modifications are in order, according to Mr. Thompson, with the completion of the new five-foot plant. Instead of the plate which hooks under the neck of each pipe, it will probably be more advantageous to use a clamp which will grab each length of pipe at the midsection, then tilting it horizontally, for transfer to a conveyor belt, or horizontal rack. Horizontal drying will be used in the new five-foot plant, for which a new dryer is currently under construction.

Moved to Kiln Cars

The horizontally-dried pipe will be moved by conveyor belt directly to the kiln cars. Although experiments are being carried out to develop a powerful clamp, swinging from a pneumatic cylinder, which will lift two at once, it is likely that only a single length of pipe can be handled in this way, according to the engineering department. As much pipe as possible will be handled on racks, rather than the familiar pallet of the past, in all drying, handling, firing, and off-loading operations. Meanwhile, the unique air-powered yokes with their aluminum plates have been a highly satisfactory means of cutting costs, damage, and fatigue.

new markets! new profits!

with "hand dressed"

BRICK

by **PITCHMASTER**

Here is a machine that incorporates the skills of the craftsman with more production muscle than twenty men.

Reach NEW markets, NEW profits by offering a NEW brick with greater depth of beauty.

- Culled brick can be converted to premium priced material.
- Fifty lineal feet of "Hand-Dressed" brick per minute.
- Instant adjustment to material height and depth of pitch. No limitation on material length.
- All material is conveyed through machine in a continuous flow by belts and rollers. Machine maintenance is reduced to the absolute minimum.

No other comparable machine in the field today will match the productivity and dollar profit that PITCHMASTER affords to make it a common sense investment.

NEW AND REVOLUTIONARY IN DESIGN! TESTED AND PROVEN

Names of satisfied users furnished on request

$4000.00
F.O.B. FRANKFORT, INDIANA

E & R MFG. CO. INC.
FRANKFORT, INDIANA

Circle Service No. 49

Clay Mining . . .

(*Continued from page 57*)

ditional areas for company operations.

Five loaders with a total capacity of ten yards are available to keep the 14-yd. Mack rear dump trucks moving. Three of these loaders are Marions. The largest loader is a Type 93-M which can be set up as either a shovel or dragline. Its 2½ yd. bucket has been built up with side plates so that it handles 3-yd. loads. The two other Marions are both 1½-yd. shovels.

The haulage units travel varying distances to the plant due to the different locations of the pits. On an average thay haul four to five miles.

Trucks arriving at the plant dump into an underground hopper that feeds the clay into a 48 in. roll crusher. Material leaving this primary crusher is minus five inch and is transported by a 30-in. rubber belt conveyor to the top of a storage shed.

In the storage shed the raw Kaolin clay is separated into piles according to its viscosity, color, purity, etc. Rubber tired front end loaders are

no more downtime to replace connectors...

HANCO FLUX POWER SCREEN HEATERS

transmit power through the air!

With the all new Flux Power by Hanco all mechanical connections between transformer and screen are eliminated. The 0 to 4000 ampere current is transmitted through the air by inserting a conductor through the eye of the transformer. This permits unrestricted vibration, maximum power transmission and true screen balance.

5 YEAR GUARANTEE

★ Dust-tight, waterproof construction
★ Dual voltage, 220/440 volt
★ Use either plain or stainless cloth
★ Anti-magnetic steel side rails

write today for full details:

HANCO INTERNATIONAL

CANTON 7, OHIO, U. S. A. — CABLE HANCO

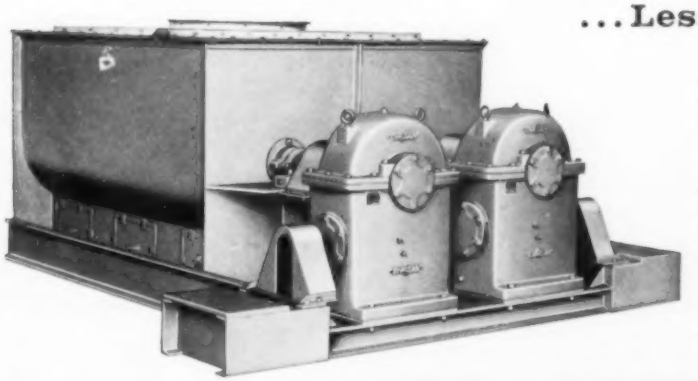
EUROPEAN SALES AND MFG.
HANCO INTERNATIONAL
6 WIBAUTSTRAAT • AMSTERDAM, HOLLAND

Circle Service No. 48

EHRSAM®

DOUBLE-BARREL MIXER

Increases Productivity ...Lessens Costly Downtime



The Ehrsam double-barrel paddle mixer writes its own ticket for economy and increased productivity as a fast, heavy-duty machine for the intensive blending of dry, powdered or granular materials.

Precision engineering and construction cut costly, annoying downtime. Steel plate mixing barrels, adjustable stuffing box seals, heavy-duty roller bearing pillow blocks are only a few of the stress points designed to withstand abusive, day-after-day operation.

Combined with a surge hopper, charging hopper with scales, Ehrsam will program an automatic charging, mixing, and discharge operation to your specifications.

20 TO 120 CUBIC-FOOT MODELS AVAILABLE

The J. B. EHRSAM & SONS MFG. COMPANY

Enterprise, Kansas

DISTRICT OFFICES

Kansas City, Kans. / Denver, Colo. / Chicago, Ill. / San Francisco, Calif. Fort Worth Tex. / Phoenix, Ariz. / Hastings, Neb. / Albuquerque, N. M.

EHRSAM **Enterprise, Kansas**

Please send new Ehrsam Mixer Catalog 8A. I am also interested in surge hoppers____; screw conveyors____; Dracon____; belt conveyors____; and bucket elevators____

NAME_____

FIRM_____

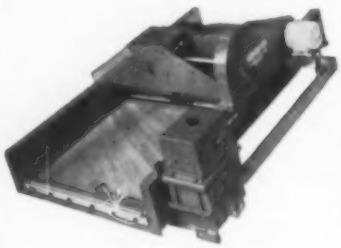
ADDRESS_____

TOWN_____ STATE_____

E-M/2-661

Circle Service No. 50

Top Screening Efficiency— Yours with Leahy® Screens



THE Leahy NO-BLIND VIBRATING SCREEN

— offers —

INTEGRATED HEAT SCREENING

Of all the screens you ever tried . . . or ever heard about . . . the Leahy screen delivers accurately sized products at the lowest possible cost.

This is because everything about the Leahy screen is specialized for high capacity screening of clays and shales. Integrated FlexElex® jacket heating is powered through oversize bus bars without bothersome flexible connectors . . . differential vibration at 1600 v.p.m. dislodges oversize wedging particles . . . vibration is confined to the jacket only to save power . . . and jacket changes are effected in moments without the need for breaking and remaking separate electrical connections.

All of these things make for efficient, economical screening unmatched anywhere else in the field.

Send for Bulletin 16-EH.

THE DEISTER CONCENTRATOR CO., INC.

The Original Deister Co., Est., 1906

913 GLASGOW AVENUE FORT WAYNE, INDIANA

Circle Service No. 51

used to transport the clay from the storage shed to hoppers. The loaders haul the material from the various storage piles to obtain the proper blend of clay properties.

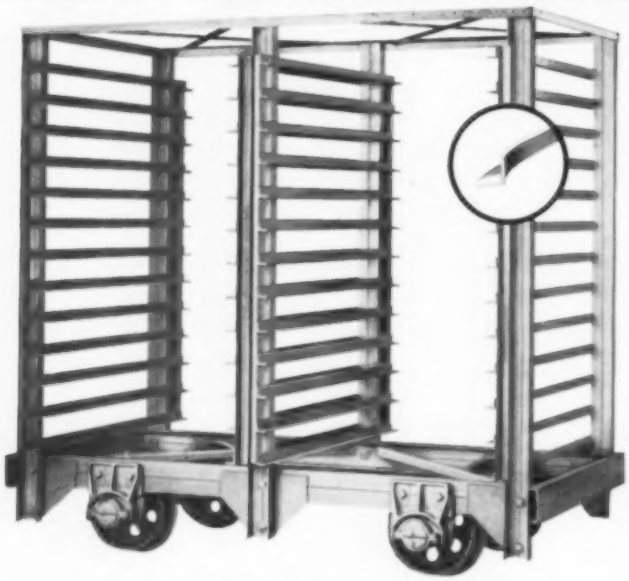
Actually, Huber's plant consists of two separate and distinct processing lines. One area produces an air-floated clay while another produces water-washed clay. Both types have distinct properties of their own.

Refractory Container

A revolutionary new, self-dispensing, hopper bottom container has been developed for shipping refractory ramming and gunning mixes for use by the steel industry in open hearth and electric furnaces.

The new container, known as Kaiser-Pak, was developed jointly by Kaiser Refractories, a division of Kaiser Aluminum & Chemical Corp., and Corrugated Container Co., of Columbus, Ohio to provide customers with an easier, lower cost method of handling the refractory materials required to reline, re-surface or repair open hearth or electric furnaces used in industry.

HANDLE PALLETIZED MATERIALS QUICKLY AND SAFELY ON CHASE RACK CARS



Rack car shown above was built to special specifications for Harbison-Walker Refractories Company. Construction is extra-heavy to handle refractory clays.

Sturdy Chase Rack Cars are built to withstand hard usage. They are suitable for soft brick, fire clay shapes and other palletized materials. Shelf angles can be flared (see inset) to receive pallets from an automatic loader. Number of shelves and shelf spacing can be adapted to your individual requirements.

TROUBLE-FREE CHASE BEARINGS

Chase Rack Cars are fitted with time-proven Chase Flexible Bearings unless other bearings are specified. The simple design of this dustproof, oil-retaining bearing keeps it operating smoothly with a minimum of maintenance.

PALLETS AVAILABLE IN ALL SIZES

WRITE, WIRE OR CALL FOR DESCRIPTIVE LITERATURE OR SEND SPECIFICATIONS FOR A PROMPT QUOTATION.

Chase FOUNDRY & MANUFACTURING CO.

2350 Parsons Avenue • Columbus 7, Ohio

Circle Service No. 63

leakproof

CLAY PIPE JOINTS *with* RCI EPOXY *and* POLYESTER

RCI epoxy and polyester resins especially formulated for clay pipe joints offer the pipe manufacturer materials of superior adhesion, toughness, resilience, compression set resistance, and resistance to acids and alkalis.

In addition, the controlled curing characteristics of these resins in combination with RCI hardeners and catalysts assure ease of handling and maximum processing economy.

Why not let RCI's long experience with plastic resins assist you in obtaining optimum production efficiency in casting these improved clay pipe joints?

REICHHOLD CHEMICALS, INC.
RCI BUILDING
White Plains, New York

Circle Service No. 52

EAGLE SHALE PLANER

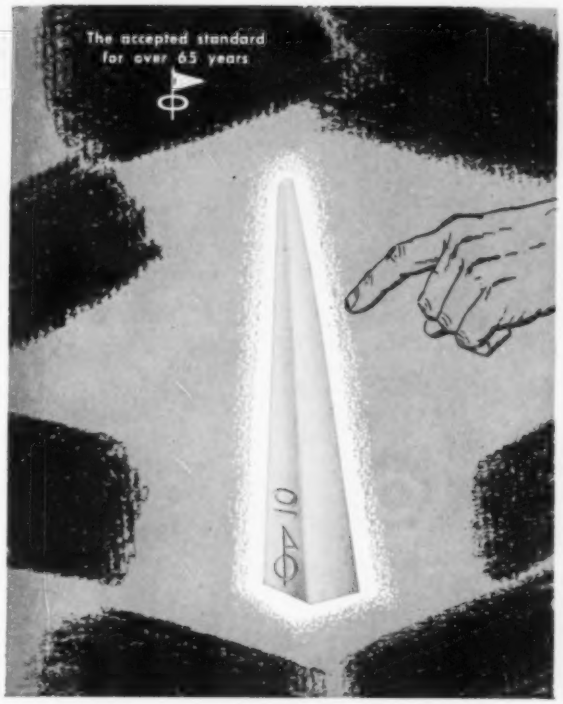
does clean cut job for the
Delaware Clay Co., Delaware, Ohio

No other clay winning equipment excavates clay with greater efficiency or lower cost per ton than an Eagle Shale Planer. No drilling or explosives needed. Clay is planed off in small pieces, ready for fine grinding—no need for primary crushing. All strata in bank are mixed, as shown in photo above, resulting in more uniform ware. The ***crawler*** mounted Eagle Shale Planer shown, with 40' tower, is doing an excellent "clean cut" job for Delaware Clay Co. Get the complete facts—send for Bulletin 456.

SINCE 1872
EIW
EAGLE IRON WORKS

EAGLE IRON WORKS
ENGINEERS • MANUFACTURERS
131 Holcomb Ave., Des Moines, Iowa

Circle Service No. 53



ORTON CONES

time-tested, industry-proved!

During two-thirds of a century Orton Standard Pyrometric Cones have established themselves as an integral part of the ceramic industry. Their reliability and uniformity is unexcelled.

Pyrometric cones measure temperature qualitatively. They may be used to indicate the end point of firing, providing an accurate measurement of the maturity of the ware and the distribution of "heat work" within the kiln. A visual check is accomplished by placing plaques of Orton Cones so their deformation may be observed through the kiln peep holes during the latter stages of firing.

Further information on Orton Cones and their applications is available in the free booklet, "The Properties and Uses of Pyrometric Cones." Request your copy.

Foreign Sales: **International Division, The Ferro Corporation, 4150 E. 56th St., Cleveland, Ohio, or the Foundation**

the fir(e)ing insurance of thousands

The Edward ORTON Jr. Ceramic
FOUNDATION
1445 Summit St., Columbus 1, Ohio, AXminster 9-8023

Circle Service No. 54

- **Fluorspar**
- **Magnetite**
- **Chromite**
- **Manganese**

NATIONAL — ALWAYS UNIFORM — ESTABLISHED 1884

NATIONAL PAINT & MANGANESE COMPANY offers the following advantages:

1) Two producing plants strategically located at Brownsville, Texas and Lynchburg, Va. Complete inventories are constantly maintained at plants and Lindale, Texas warehouse.
2) Technical representatives backed by modern research facilities coupled with 66 years of experience present a backlog of unparalled information that is available to the brick producing industry.
3) Comprehensive quality control beginning with ore source and continuing throughout processing has been established to assure uniform product to customer's specification.

Serving the building brick industry is our business—not a sideline.

NATIONAL PAINT & MANGANESE COMPANY

A division of Howe Sound Co., Inc.

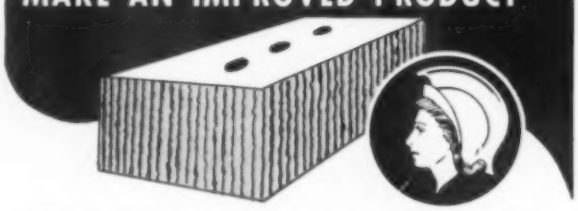
810 Park Building
Pittsburgh 22, Pa.

Plants:
Brownsville, Tex.
Lynchburg, Va.
Warehouse:
Lindale, Tex.

CONTRIBUTING ASSOCIATE SCPI

Circle Service No. 61

STOP GREEN SCUM PERMANENTLY MAKE AN IMPROVED PRODUCT



MINERVA FLUORITE vitrifies light face brick at low temperatures. Seals in vanadium and iron salts. Eliminates danger of darkening colors through high firing. Improves finished product.

- STOPS GREEN SCUM PERMANENTLY
- ALLOWS DELICATE COLOR CONTROL
- LOWERS FUEL REQUIREMENTS 20% TO 30%
- IMPROVES STRUCTURAL STRENGTH OF BRICK
- INSURES STRONG, WATERPROOF MORTAR BOND
- COSTS ABOUT 50¢ PER TON OF CLAY
- TECHNICAL ASSISTANCE AVAILABLE

MINERVA CO.
A DIV. OF MINERVA OIL CO.
ELDORADO, ILLINOIS
BRidge 3-2191

Dept. B-10-61

Please send full details and Free Fluorspar Sample.

Name .....
Firm Name .....
Address .....
City ..... State .....

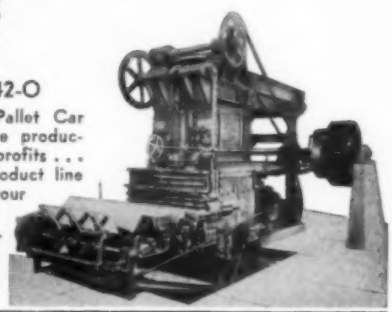
SEND COUPON TODAY FOR DETAILS AND FREE SAMPLE

Circle Service No. 55

POSEY

COLONIAL BRICK

AUTOBRIK MACHINE
with the new
1961 Model 42-O
and automatic Pallet Car Loader. Increase productivity . . . boost profits . . . diversify your product line . . . expand your market.



Write for FREE 12-page booklet

POSEY IRON WORKS INC.

Custom Fabrication For Over 50 Years

DIVISIONS:
• Iroquois Asphalt Plants • Mixers and Blenders
• Tunnel Forms • Industrial Heating • Foundry
• Large OD Steel pipe

100 SOUTH STREET LANCASTER, PA.

Circle Service No. 56

ADVERTISERS INDEX

American Clay Machinery 86
American Minerals, Inc. 71

Babcock & Wilcox Co. 44-45
Bell Clay Co. 2
Besser Co. 20
Bickerstaff, Inc. 11
Bonnot Co., The 63
Bradley Machine Co. 75

Carpenter Engineering Services ..32
Case, J. I. Co. 38-39
Chambers Brothers Co. 41
Chase Foundry & Mfg. Co. 78
Chisholm Boyd & White Co. 37
Classified Ads 82-83
Commercialores, Inc. 69

Deister Concentrator Co., Inc. ...78
Des Moines Glove & Mfg. Co. ..81
Dodge Mfg. Corp. 24
Dow Corning Corp. 9
Drakenfeld (B. F.) & Co., Inc. ...10

E. & R. Mfg. Co. 76
Eagle Iron Works 79
Ehrsam & Sons Mfg. Co. 77

Fate-Root-Heath Co. 85
Ferro Corp. 6

Green (A. P.) Fire Brick Co. 15

Hannon (F. R.) & Sons 77
Harrop Ceramic Service 17
Hendryx (Dwight B.) & Assoc. ...19
Hoffman Brothers Drilling Co. ...73

Kennedy Van Saun Mfg. & Engr. Corp. 16
Kimberly-Clark Corp. 23

Lanly Co., The 12
Lavis-Werke, AG 14
Louisville Machine Mfg. Co. 73

Marietta Concrete Div. 83
Miller Equipment Co. 18
Minerva Co. 80
Minneapolis-Honeywell Regulator Co. 26

National Castings Co. 16
National Paint & Manganese Co. 80
North State Pyrophylite Co. 13

Ohio Kilns 8
Orton (Edw. Jr.,) Ceramic Foundation 79

Paris Mfg. Co. 81
Pearne & Lacy Machine Co. 64
Pekay Machine & Eng. Co. 71
Pemco Corp. 25
Pennsylvania Crusher Div. 35
Philadelphia Quartz Co. 69
Posey Iron Works 80

Reichhold Chemicals, Inc. 79
Robeson Process Co. 75
Robinson Ventilating Co. 66

Screen Equipment Co. 72
Steele (J. C.) & Sons 84
Swindell-Dressler Corp. 4

Titanium Alloy Mfg. Div. of National Lead Co. 3
Towmotor Corp. 40
Tyler (W. S.) Co. 65

U. S. Borax 70
U. S. Stoneware 7
Universal Atlas Cement, Div. of U. S. Steel 62

Varner (R. G.) Steel Products, Inc. 28

Williams Patent Crusher & Pulverizer 74

AVOID COSTLY INJURIES

LONG-WEARING TUFHORSE MITTENS AND PADS GIVE EXTRA PROTECTION

300

Tufhorse KANT-RIP

DES MOINES GLOVE & MFG. CO.
Des Moines, Iowa

Increase the output of your men. Protect their hands with Tufhorse hand pads, gloves or mittens. Made of heavy, durable cowhide, Tufhorse Kant Rips are flexible, tough, help men work faster.

MAIL FOR FREE SAMPLE

Des Moines Glove & Mfg. Co.
Des Moines, Iowa

Please send free sample of your (.....) hand pad, (.....) glove, (.....) mitten for testing. (Specify which one you want).

Name .....
Position in Co. .....
Address .....
City .....
State .....

Circle Service No. 57

Parmanco

SPECIALISTS IN AUGER TYPE DRILLS

. . . DRILLS MEAN FASTER MORE ECONOMICAL DRILLING

Model HV-172 Drilling Feature Check List

- Four drilling speeds with reverse
- Drill powered by 65 H.P. motor or 106 H.P. motor
- Heavy duty truck type transmission with 10" truck clutch
- Three leveling jacks to insure straight holes
- Hydraulic feed for fast, smooth, dependable easy operation
- Mounted on 3 wheel chassis or truck
- Drills holes to 100 feet or more

Complete Information on Request

Model HV-172

PARIS MANUFACTURING COMPANY
PARIS, ILLINOIS

Circle Service No. 62

Classified ADS

Limited to Want Ads, Consulting Engineers, or Used Equipment ads, (wanted or For Sale)

TRANSIENT WORD ADS: 15c per word for each insertion.

Headings such as "Wanted", "For Sale", etc. and address to be counted as part of the ad. Minimum charge $3.00 each insertion.

POSITION WANTED ADS: $3.00 for 25 words or less; each add'l word 15c.

FOR USE OF BLIND ADDRESS: (Care of BRICK & CLAY RECORD) count as 15 words to cover cost of handling and forwarding replies.

DISPLAY-BOX TYPE ADS

$18.00 per inch. On advance orders for twelve consecutive issues, $15.00 per inch per insertion. (No retroactive adjustment).

An inch is measured vertically on one column, 2¼" wide; three columns on a page. For a two-column advertisement add together height in each column.

Display classified advertisements are set and rates apply in half-inch multiples. (1 inch minimum; 5 inch maximum).

Add 25% to above rates for Reverse Plate (white lettering on black background).

All rates based on payment in advance except on regular contract.

No Agency Commission or Cash Discount

BRICK and CLAY RECORD
A CAHNERS PUBLICATION
5 S. Wabash Ave., Chicago 3, Ill.

WANTED—HELP

CERAMIC ENGINEER—Young, aggressive man with background in refractories. For sales, service and development work on refractory products for metallurgical, oil refinery, power generating plants, etc. Challenging opportunity for a man who has had experience either in the laboratory or field who wants to move ahead. This is an old, established refractories manufacturer with young, enterprising personnel, that is branching out into new fields. All replies confidential. Box 9-BGB care of Brick & Clay Record.

SALES ENGINEER for large refractories company in Middle West. Prefer experience in refractory application. Position requires travel out of central location. Fine Benefit program. Excellent opportunity for advancement. Write Box 10-BDZ, care of Brick & Clay Record.

WANTED—Plant Superintendent with experience and good references for brick plant with stiff-mud machinery and tunnel kiln in New York State. Salary open. Please give full details in first letter. Write Box 10-BDD, care of Brick & Clay Record.

POSITION WANTED

CERAMIC Engineer with exceptional record and experience in structural clay products and refractories desires responsible position with progressive concern. Capable assuming complete charge of plant operation. Address Box 10-BCM care of Brick & Clay Record.

WANTED—Used combined Pug Mill & De-Airing Extruder with 6" Auger. Structural Clay Products Research Foundation, Geneva, Illinois.

WANTED: Broken Silicon Carbide Kiln Furniture or Bats. Will pay top price. Urgent. Union Mining Co., 2306 1st. Nat'l. Bank Bldg., Pittsburgh 22, Pa.

FOR SALE—USED EQUIPMENT

FOR SALE—60' tunnel kiln, 30 cars 25" x 60", 3 unused motors and Reeves drives with stainless steel crown fans, complete instrumentation, etc. Will sell complete for dismantling or components. Box #397, Wichita, Kansas.

FOR SALE—USED EQUIPMENT

FOR SALE

1—10" x 20" Allis-Chalmers jaw crusher, 30 T.P.H.
2—Munson rotary blenders, 20 cu. ft., 1,200# batch.
4—Stoker bag settlers with timers.
Above equipment in good condition and priced at $500 each, f.o.b. location. Address Box 10-BCR, care of Brick & Clay Record.

DEAIRING BRICK MACHINES—3 sizes
PUG MILLS—8', 10'—Single & Double Shaft
GRANULATORS—Chambers #51 Freese P-16
CUTTERS—Chambers, Steele #18 & Hand
DRY PANS—7' & 9'
HAMMER MILLS—Many Sizes
SMOOTH ROLLS—12", 18" & 24"
CONICAL ROLLS—Chambers & Brewer
DISINTEGRATORS—12", 16", 24"
JAW CRUSHERS—Many sizes
GYRATORY CRUSHERS—Allis Chalmers #5

50/100 t.p.h. CRUSHING PLANT
w/Conveyor, Screen, Bag House

FEEDERS—5' Disc, Apron, Reciprocating
ROTARY DRYERS—24" to 8' Diam.
DRY MIXERS, Lancaster SKG, #3, #4, Simpson #3 Clearfield #610
SIGMA BLADE & RIBBON MIXERS—Several
SCREENS—Many—Single & Double Deck
HARDINGE CONICAL MILLS—4½', 6', 8'
BALL & PEBBLE MILLS—Many Sizes
LAB SIZE—Crushers, Mixers, Screens
SLIP LAWNS—Crossley Double Deck
HAND TILE PRESS

LIST YOUR SPARE EQUIPMENT WITH US
ROBERT L. CLARE
212 Rector St. Perth Amboy, N. J.
Phone Hillcrest 2-0061

FOR SALE: C-132 Spur Chain & Sprockets Link Belt; 280 ft. chain belt type Chabelco Rep Chain with pusher dogs #SR-196; 2 Wisconsin air cooled 2 cyl. 4 cycle motors, size 3¼ x 3¼; 5—4 x 4 Model Bickerstaff brick forks for lift truck; corner brackets and turnbuckles for Periodic Kiln; 50 3" and 33 4" gas burners for Periodic Kiln; 4 Syntron screen vibrators & controls; 1 G.E. starting compensator 220 volts 187 amp. 60 cy. 3 PH. 125 HP type I Fork; I G. E. IND Motor 2200 volts Pin, 200 volts Sec. 13.6 amp Pri 116 amp sec. RPM 865 with compensator switch & Reastat control—9 Bank of resistance; 66 ft. chain belt rex #458 chain; new Barrel liners for 14" Brick Machine (American #290). Alliance Brick Corp., Box 540, Alliance, Ohio or Phone TA 3-1610.

JUST PURCHASED

2—8'-6" x 70' rot. dryers, ⅝" welded.
1—6' x 150' rot. kiln, ⅝" welded.
1—Bonnot 5' x 10' contin. ball mill, 75 HP.
1—Symons 2' shorthead cone crusher.
1—Allis-Chalmers 6' x 12' rod mill, 125 HP.
1—Hardinge 8' x 48" conical pebble mill.

IN STOCK

1—Vulcan 10' x 11' x 175' rotary kiln, 13/16" shell.
3—10' x 100' rot. dryers, ⅝" shell.
2—National 10' x 78' rotary dryers, ¾" shell.
2—8'-6" x 70' dryers, ⅝" welded.
1—Traylor 8' x 80' rot. kiln, ⅝" welded.
1—7'6" x 62' rot. cooler, ½" shell.
1—Allis-Chalmers 7' x 120' rot. kiln, ⅝" welded.
2—Bonnot 7' x 110' rot. kilns, ⅝" shell.
1—6' x 7' x 100' rot. kiln, ⅝" shell.
1—Standard 3' x 23' rot. dryer, ¼".
1—Raymond 66", 6-roller hi-side mill.
1—Raymond 50", 5-roller hi-side mill.
2—Hardinge 7' x 36" conical pebble mills.
3—Allis-Chalmers 5' x 22' ball-tube mills.
6—Jaw crushers; 36" x 15", 24" x 13", 20" x 6", 18" x 9", etc.

PERRY EQUIPMENT CORP.
1432 N. 6th St. Phila. 22, Pa.
POplar 3-3505

250 Chase Double Deck Cars
250 Single Deck Cars
Rails and Accessories

M. K. FRANK
Grand Central Palace, New York 17, N. Y.
401 Park Bldg., Pittsburgh 22, Pa.

FOR SALE: Soft Mud Brick Machine. Make—Posey Iron Works "Auto Brick" Capacity 110,000 in 8 hours. Dryer Cars, Steel Pallets & Other Equipment. Full set in working condition. Available because of change of operations. Direct sale preferred. Call Beacon, N.Y. 831-1400, Dr. J. Volmars.

★ ANOTHER AUCTION BY ★

HARRY DAVIS & CO. P.O. Box 5601 Pittsburgh 7, Pa.

Pursuant to a decision by the Board of Directors:

NEW BRIGHTON CLAY PRODUCTS
Blockhouse Run Road — New Brighton, Pa.
(12 Miles North of Pittsburgh, Pa.)

SATURDAY — October 21 — 10 A. M. (E.S.T.)

EQUIPMENT OFFERED INCLUDES:

Chambers Bros. Brick Machine #11 C
Steele Brick Cutter Model 18
Pneumatic Tired Fork Lifts
Bucket Elevator
Conveyors and Motors
Quantity of Maintenance Material, Parts and Supplies
Stevenson Dry Pan
18" x 30" Crusher
100-150 H.P. Westinghouse Motors
Dryer Cars
10 Spool Car Puller
Lrg. Quantity Steel Rail

TERMS: Cash (25% when item is knocked down—Balance at conclusion of sale—same day)

Each Item Positively Sells to The Highest Bidder
NO MINIMUMS — NO BUY-BACKS — NO BID INS
REAL ESTATE TO BE OFFERED AT 1 P.M. (E.S.T.)
Parcel #1 — Plant site — 14 acres with Building and R.R. Siding
Parcel #2 — 20 Acres of Ground

HARRY DAVIS & COMPANY
P.O. Box 5601 — Pittsburgh 7, Pennsylvania — JAckson 1-7042
"Your Best Market When You Buy or Sell"—Contact Us To
Turn Your Idle Assets Into Cash!

NOTE: This equipment ranges from good to excellent condition. It has been well maintained and is ready for work. It was in production until July 31 of this year!!

FOR SALE—USED EQUIPMENT

DESIRABLE EQUIPMENT AT REALISTIC PRICES

Crushers and Hammer Mills
Muller type Mixers-Mills
Rotary Dryers and Kilns
Sifters, Screens, Separators
Filter Presses and Filters
Ball & Pebble Mills
Raymond Imp Mills, All Sizes
Presses and Pellet Machines

Send for "First Facts"

FIRST MACHINERY CORP.
209-10th St. Bklyn. 15, N.Y.
ST. 8-4672; Cable "Effemcy"

DE-AIRING MACHINES—FRH (PA4) 3HP—FRH (PR6) 7½HP—J. C. Steele 50 Special, 16" auger 100 HP—Bonnot 18" auger 150 HP—American (801) 18" auger 200 HP

CUTTERS—Automatic Reel—J. C. Steele #18—Freese P25, 10" belt—Chambers #10, Roman & Norman brick

PUG MILLS—9' Freese—10' American (2nd shaft)—15' Granulators Freese/Chambers

DRY PANS—7' American—9' Bonnot—2 American 418 grinders

DRYERS—24" x 24"—3' x 24'—5' x 40'—6' x 20'—7' x 58' (50 HP gearmotor)

CRUSHERS—DISINTEGRATING—18" x 16", 24" x 12"—30 x 16—24 x 30

LAWLER COMPANY

Metuchen, N. J. **Liberty 9-0245**

WALTER C. STOLL & SONS
New and Used CLAY WORKING MACHINERY
5028 Alhambra Ave., Los Angeles 32, Calif. CApitol 2-1141

RAILS—TIE PLATES
Frogs & Switches
Track Accessories
W. H. DYER CO., INC.
1811-B Railway Exchange Bldg., St. Louis 1, Mo.

FOR SALE: FRH6 and Jr. Steele #30, #40, #50, Chambers #11C & Royal deairing; Freese GH Steele #1, #2, Ray, Amer 404 nondeairing, 36" & 42" Lancaster Brick Machines. 5' to 10' Dry, also Wet Pans. Lehmann 7' Mixmuller. Dixie 5060, Williams #30 Hammermills. Pugmills, single & double roll Crushers, Vibrating Screens. 24", 25", 26" & 28" ga. Dryer Cars, sgl., dbl. & triple deck. Komarek Greaves Briquetting, Stevenson Sewer Pipe, Boyd 4 mold Dry Presses. Four 2 mold Bonnot Represses. Steele #18 Cutters. Tunnel Kilns & Kiln Cars. 4 x 10, 8 x 125 Rotary Kilns. 5 x 17, 5 x 21 Rotary Dryers, Coolers or Ball Mills. Mid-Continent Equipment Co., 8321 Gannon, St. Louis 32, Missouri, WYdown 1-2826.

FOR SALE—USED EQUIPMENT

ONE Steel Model 20-E combined auger de-airing machine and one Model 20-E.
FIVE assorted brick dies, ' hollow tile-patio die and roman brick die.
ONE, Steel No. 40-E combined de-airing machine
ONE, Real Hand cutter.
ONE, Steel No. 18 Automatic Cutter.
ONE, International De-airing Combined Falcon, with extra liners knives, pinion shaft resurfaced augers—good condition.
ONE, American Automatic No. 858 Automatic Electric Cutter good condition.
TWO Fernholtz 48" cage type ulverizers, one SK.F. bearing the other water cooled babitted bearing, all good condition.
ONE, No. 1 and No. two Paird Pot Machines with seven pot dies, all good condition.
ONE, Model W.6422 4½ x 4 twin cylinder water cooled Quincy Vacuum Pump excellent condition.
ONE, 4' x 40 ft/horizontal refractory lined dryer with stack combustion chamber 5½ hp. motor gear reduction drive Johnson oil burners, good condition.

FERNHOLTZ MACHINERY CO.
8468 B Melrose Place, Los Angeles 46, Calif

FOR SALE

10' Diam. Clearfield Maximuller, V drive. Timkin Step.
HUMMER SCREEN 4' x 10' Heated.
BELT FEEDERS to Maximuller and Brick Machine.
BRICK MACHINE Steele 50 Model C, de-aired, separate motor drives.
CUTTER Steele 18 Special L.H. 2⅜" cut.
DRYER CARS, 250—Tripple deck, 24" Gauge. Chase, with car puller.
T—IRON RAIL, 20 Tons 16 lb.
TURBO BLOWERS—4 National #324, 15 HP.
OIL TANKS—2—12,000 gal with Steam—coils, Horizontal, with 40 HP Package boiler & Pumps.
BUILDINGS—50' x 150', ⅜" x 8" kiln bands. Lorain T5, 1 yd shovel for parts. Many other valuable items.
Plant located at Woodbridge, Va., Route U.S. 1—30 Miles South of Washington, D.C., Phone Woodbridge 494-2744, if no answer call:

HERMAN A. HALL, Wyomissing, Pa., Phone: FRanklin 2-4310, or Forrest Paschal, Siler City, N. C., Phone: SHerwood 2-2500.

One 40 ft. Clay Elevator with 25HP 220V Motor. A two-car "MECA" battery powered Transfer complete with cable and Selenium Rectifier. A LINK-BELT L-B-85 ⅜ Yard Gas powered Shovel-Crawler. Moorhead Brick & Tile Co., 5th Ave. & C.G.W. Ry., St. Joseph, Missouri.

MISCELLANEOUS

T. W. GARVE
Registered Professional Engineer
Designs, Reports, Clay Testing
Phone: AM 2-6998 — **69 West Weisheimer Rd. Columbus 14, Ohio**

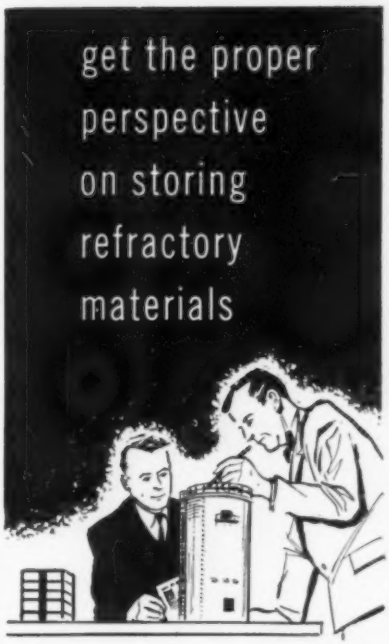
FOR SALE—Foundry Clay, also buff burning clay. B. F. Boos and Company, Macomb, Illinois.

FOR SALE—Cone 34 Calcined Flint in lump or ground form and cone 36 High Alumina Nodular Clay. Union Minerals, Inc., 2306 First Natl. Bank Bldg., Pittsburgh 22, Pa.

F. J. FORD
Representative—Engineer
Clay Working Machinery
Car Tunnel Kilns—Dryers
P.O. Box 537, Dallas, Texas — **P.O. Box 690, Whittier, California**

For Sale—Lower Kittanning buff burning plastic Fireclay. Mine run, crushed, or ground. Consolidated Clay Mines, 265 W. Lincoln Way, Lisbon, Ohio.

FOR SALE—Spencer Vacuum Cleaner—Model P-190, 7½ H.P. Motor, mounted on four wheel hand truck. Salisbury Brick Co., Inc., Salisbury, Maryland.



MARIETTA
INDUSTRIAL SILO STORAGE SYSTEMS

Don't let old-fashioned bulk storage methods cut your profits through ground storage losses . . . inefficient small bins . . . time-consuming bag handling.

Today . . . there's a better way to store refractory materials because Marietta custom designs each industrial silo system to precise storage needs and to fit any materials handling system . . . new or old. That means ideal protection for bulk materials; maximum convenience in storage and handling of large quantities. Marietta systems eliminate fire hazards and cut insurance costs, too. It will pay you to investigate Marietta's complete "one-responsibility" package . . . plan, design, fabrication and erection. That . . . and the fact that only Marietta makes 4 types of concrete staves . . . assures you the right system to meet your exact bulk storage needs. For full information, write

Marietta
AM CONCRETE DIVISION
AMERICAN-MARIETTA COMPANY
Marietta, Ohio
Representatives in principal cities
Circle Service No. 65

A NECESSITY

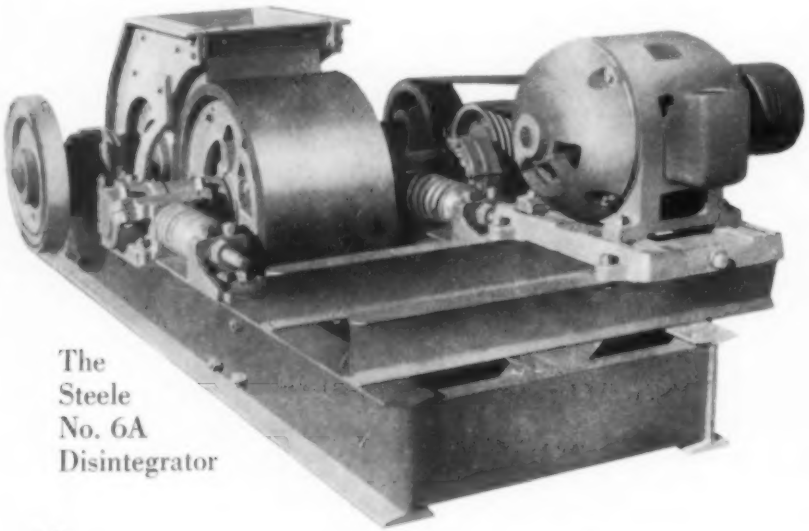
WHERE MATERIAL IS

HARD **STICKY** **LUMPY**

AS AN AUXILIARY GRINDER the No. 6A reduces large lumps to peanut size—usually with a lot of fines. It breaks up smaller stones and throws out larger ones. The use of the 6A relieves overloaded dry pans and materially reduces grinding time.

AS A PRIMARY CRUSHER, where lumps are not over 6″, the No. 6A Disintegrator will reduce medium-hard or soft sticky materials to minus ¼″ or less. No other machine will handle extremely sticky materials nearly as well.

The No. 6A is an exceptionally rugged direct-acting roll type machine which requires a minimum of maintenance. Its ability in many cases to do the entire job without the use of any other crushing machine, or to reduce lumps so uniformly that the smooth roll crusher can efficiently handle the material, makes it a most valuable machine in many plants. Capacity 30 to 70 tons an hour, depending on material and roll spacing.



The Steele No. 6A Disintegrator

Steele also makes two smaller disintegrators—the No. 4A and No. 2. We will be glad to send you full information on these versatile machines.

SUSTAINING ASSOCIATE SCPI

J. C. Steele & SONS, Inc., Statesville, N. C.

Pacific Agents: Walter C. Stoll, 5028 Alhambra Ave., Los Angeles 32, Calif.

THE BEST IN CLAY MACHINERY SINCE 1889

Circle Service No. 58

SINCE 1888

EXTRUSION EQUIPMENT SPECIALISTS

Need extrusion equipment to solve a particular problem? Seventy-one years of experience in building extrusion machinery for all types of materials and uses, all kinds of body shapes and sizes—to meet the exacting specifications of companies in the electronic, chemical, plastic and ceramic industries—gives F-R-H the engineering know-how and versatility *you require*. For complete information, mail coupon to: The Fate-Root-Heath Company, Dept. B-1, Plymouth, Ohio.

F-R-H

EXTRUSION MACHINES

THE FATE-ROOT-HEATH COMPANY, DEPT. B-1, PLYMOUTH, OHIO

Please supply additional data on your products and services. I am interested in (Please Check):

- ☐ Special Machines To Solve My Problem
- ☐ Special Extrusion Dies and Accessories
- ☐ Sample Extrusions From Your Machines

Industry_____

Product_____

Your Name_____

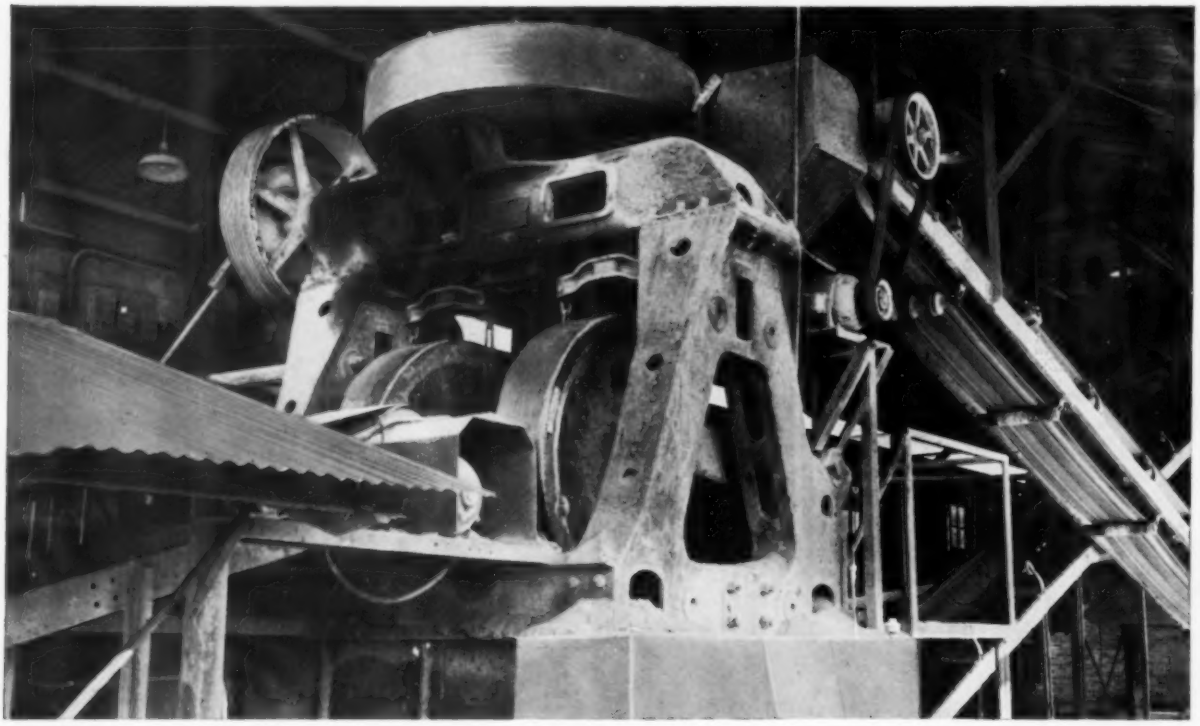
Company_____

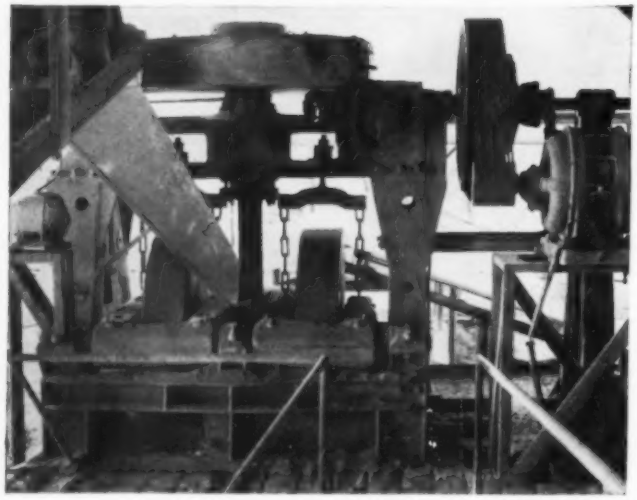
Address_____

City_____ State_____

Circle Service No. 59

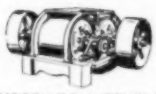
DIXIE BRICK COMPANY GRINDS 40 TONS OF SHALE PER HOUR with an American 418 grinder at its Phenix City, Alabama, plant. The shale is mixed with local clay for the annual production of 96 million face bricks. General Manager Q. L. Griffin states, "We chose the American 418 grinder because it seemed best suited for grinding our type of material efficiently and economically. We are very pleased with the low maintenance on the machine, in fact, the original tires are on the mullers and have been in constant use since 1952." *For Big Volume on Low Maintenance... Buy American*

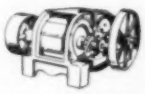




American
CLAY MACHINERY

ELECTRIC CUTTERS


SMOOTH ROLL CRUSHERS


DISINTEGRATORS

PUG MILLS

GRINDERS

COMBINATION DE-AIRING MACHINES

DIVISION OF
HUBER-WARCO COMPANY - Marion, Ohio, U.S.A.

Circle Service No. 60

Y

1

1

2